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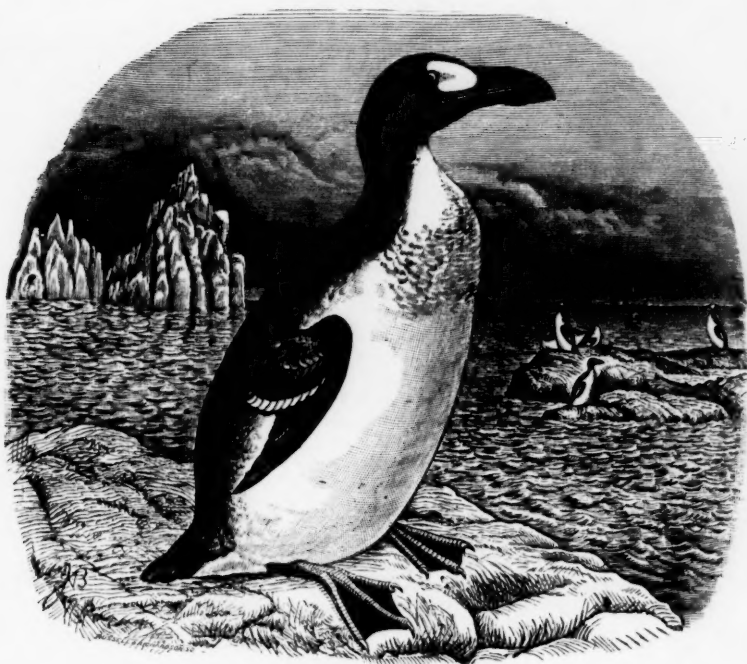
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GURNEY, JOHN HENRY, Keswick Hall, Norwich, England.....	1883
* HAAST, Dr. JULIUS VON, Christchurch, New Zealand.....	1884
HARGITT, EDWARD, Broadwater Lodge, Broadwater, Worthing, Sussex, England.....	1884
HARTING, JAMES EDMUND, Linnæan Society, Burlington House, Pic- cadilly, London.....	1883
HARVIE-BROWN, JOHN A., Dunipace House, Larbert, Stirlingshire, Scotland.....	1883
HAYEK, Dr. GUSTAV VON, Vienna.....	1884
HENSON, HARRY V., Yokohama.....	1888
HOLUB, Dr. EMIL, Vienna.....	1884
* HOMEYER, Dr. E. F. VON, Stolp, Germany.....	1884
KNUDSON, VALDEMAR, Kauai, Hawaiian Ids.....	1888
KRUKENBERG, Dr. E. F. W., Würzburg, Germany.....	1884
KRÜPER, Dr. THEOBALD J., University Museum, Athens, Greece.....	1884
LAYARD, E. L., H. B. M. Consul, Noumea, New Caledonia.....	1884
LYTTLETON, THOMAS, Lord LILFORD, Lilford Hall, Oundle, Eng- land.....	1889
McFARLANE, ROBERT, Winnipeg, Manitoba.....	1886
MADARÁSZ, Dr. JULIUS VON, National Museum, Budapest, Hungary.....	1884
MALMGREN, Dr. A. J., University, Helsingfors, Finland	1884
* MARSCHALL, Graf. A. F., Vienna.....	1884
MENZHIER, Dr. M., Moscow.....	1884
MEYER, Dr. A. B., Königl. Zool. Museum, Dresden.....	1884
MIDDENDORF, Dr. A. VON, Dorpat, Russia.....	1884
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NAMIYE, M., Tokio.....	1886
NICHOLSON, FRANK, 62 Fountain St., Manchester, England.....	1884
OATES, E. W., 6 Tenterden St., Hanover Sq., London.....	1884
OUSTALET, Dr. EMILE, Jardin des Plantes, 55 Rue de Buffon, Paris.....	1883

PALMÉN, Prof. J. A., Helsingfors, Finland.....	1883
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RADDE, Dr. GUSTAV FERDINAND, Tiflis, Russia.....	1884
RAMSEY, E. P., Sydney, New South Wales.....	1884
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RINGER, FREDERIC, Nagasaki, Japan.....	1888
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TSCHUSI ZU SCHMIDHOFFEN, Count VICTOR RITTER VON, near Hal- lein, Salzburg, Austro-Hungary.....	1884
WATERHOUSE, F. H., 3 Hanover Square, London, W.....	1889
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ALLEN, FRANCIS H., West Roxbury, Mass.....	1888
AMERY, CHARLES F., 'Forest and Stream' Pub. Co., 318 Broadway, New York City.....	1886
ANTHONY, A. W., Los Angeles, Cal.....	1885
ARCHER, W. C., 252 7th St., Jersey City, N. J.....	1888
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BERIER, DeLAGNEL, Bay Ridge, Kings Co., N. Y.....	1885
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EVANS, EVAN M., Englewood, N. J.....	1888

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EVANS, SAMUEL C., Jr., Riverside, Cala.	1889
EVERMANN, Prof. B. W., Terre Haute, Ind.	1883
FAIRBANKS, Hon. FRANKLIN, St. Johnsbury, Vt.	1885
FANNIN, JOHN, Provincial Museum, Victoria, B. C.	1888
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FISHER, WM. HUBBELL, 12 Wiggins Block, Cincinnati, Ohio.	1883
FLINT, H. W., Yale National Bank, New Haven, Conn.	1888
FLINT, WM. R., Madera, Fresno Co., Cala.	1890
FORBUSH, EDW. H., 424 Main St., Worcester, Mass.	1887
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FREEMAN, WM. H., 216 Reid Ave., Brooklyn, N. Y.	1889
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GILBERT, CARLETON, 323 West Main St., Jackson, Mich.	1889
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GREGG, Dr. WM. H., 143 West 21st St., New York City	1883
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HARDY, MANLY, Brewer, Maine.	1883
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HAUPT, LOUIS, 61 Liberty St., New York City.	1888
HAWLEY, A. H., Vineland, N. J.	1886
HAZARD, R. G., 2d, Peace Dale, R. I.	1885
HEIMSTREET, Dr. T. B., 14 Division St., Troy, N. Y.	1888
HELME, ARTHUR H., Miller's Place, Suffolk Co., N. Y.	1888
HENDRICKSON, W. F., 860 Broadway, New York City	1885
HICKS, HENRY, Westbury Station, Queens Co., N. Y.	1888
HICKS, JOHN D., Old Westbury, Queens Co., N. Y.	1888
HIGGINS, ALGERNON S., 1227 Fulton St., Brooklyn, N. Y.	1888
HINE, Mrs. JANE L., Sedan, Ind.	1890
HOLBROOK, Judge S. T., Norwich, Conn.	1885
HOLMAN, RALPH H., Worcester, Mass.	1890
HOLMES, E. S., 103 Ottawa St., Grand Rapids, Mich.	1885
HOLTERHOFF, G., Jr., Los Angeles, Cala.	1883
HOLZINGER, JOHN M., U. S. Dept. of Agriculture, Washington, D. C.	1887
HOOPES, JOSIAH, West Chester, Pa.	1889

HORNADAY, W. T., Buffalo, N. Y.....	1888
HOUGH, ROMEYN B., Lowville, N. Y.....	1883
HOWELL, ARTHUR H., 212 Madison St., Brooklyn, N. Y.....	1889
* HOWLAND, SNOWDON, Newport, R. I.....	1883
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HOYLE, CHARLES E., Millbury, Mass.....	1889
HOYT, WM. H., Stamford, Conn.....	1888
HULL, WALTER B., Milwaukee, Wis.....	1889
HURD, THEO. D., Riverside, Cal.....	1890
HURTER, JULIUS, 2346 South 10th St., St. Louis, Mo.....	1888
HVOSLEF, DR. J. C., Lanesboro, Minn.....	1885
INGALLS, CHARLES E., East Templeton, Mass.....	1885
INGERSOLL, ALBERT M., Box 712, San Diego, Cal.....	1885
INGRAHAM, D. P., Elmira, N. Y.....	1889
JACKSON, THOS. H., West Chester, Pa.....	1888
JACOBS, J. WARREN, Waynesburg, Pa.....	1889
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JARDINE, CHAS. S., 318 East 39th St., New York City.....	1888
JEFFRIES, WM. A., 78 Devonshire St., Boston, Mass.....	1883
JENKS, PROF. J. W. P., 31 George St., Providence, R. I.....	1888
JENNINGS, ALLEN H., 2101 Oak Ave., Baltimore, Md.....	1886
JESURUN, MORTIMER, Douglas, Wyoming.....	1890
JOHNSON, ALBERT I., Hydeville, Vt.....	1885
JOHNSON, FRANK E., Parkville, Kings Co., N. Y.....	1888
JOHNSON, FRED. O., Oakland Cal.....	1888
JOHNSON, PROF. O. B., Seattle, Washington.....	1885
JONES, LYND, Grinnell, Iowa.....	1888
JONES, MARCUS E., Salt Lake City, Utah.....	1890
JORDAN, A. H. B., Willsborough, Essex Co., N. Y.....	1888
JORDAN, PROF. D. S., Bloomington, Ind.....	1885
JOUY, P. L., Smiths. Inst., Washington, D. C.....	1883
KEELER, CHARLES A., Berkeley, Alameda, Co., Cal.....	1889
KELLOGG, VERNON L., Lawrence, Kan.....	1888
KENDALL, W. C., U. S. Fish Commission, Washington, D. C.....	1886
KING, GEORGE GORDON, Newport, R. I.....	1888
KNOWLTON, F. H., U. S. Nat. Mus., Washington, D. C.....	1883
KOHN, GUSTAVE, 14 Carondelet St., New Orleans, La.....	1886
KUMLIEN, LUDWIG, Sumner, Wis.....	1888
*KUMLIEN, THURE, Milwaukee, Wis.....	1883
LADD, SAM'L B., West Chester, Pa.....	1889
LAMB, CHARLES R., Cambridge, Mass.....	1885
LANO, ALBERT, Madison, Minn.....	1890
LANTZ, PROF. D. E., Manhattan, Kansas.....	1885
LAWRENCE, FRANK M., Moriches P. O., Suffolk Co., N. Y.....	1888
LAWRENCE, ROBT. B., Mills Building, New York City.....	1883

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LAWRENCE, ROBERT HOE, Humptulips, Washington.....	1890
LAWRENCE, HON. WM. M., 51 Liberty St., New York City.....	1888
LEWIS, E. G., Hartford, Conn.....	1888
LEWIS, WM. H., Pawtucket, R. I.....	1890
LEWIS, JOHN B., Eubanks, Pulaski Co., Ky.....	1890
*LINDEN, Prof. CHARLES, Buffalo, N. Y.....	1885
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LOCKWOOD, Dr. SAM'L, Freehold, N. J.....	1890
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LOOMIS, LEVERETT M., Chester, S. C.....	1883
LORING, J. ALDEN, Owego, N. Y.....	1889
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LUCAS, WM. H., Bridgeport, Conn.....	1889
*MABBETT, GIDEON, Rodney, Jefferson Co., Miss.....	1888
MACGILLIVRAY, ALEX. D., Cornell Univ., Ithaca, N. Y.....	1890
MACKAY, Prof. A. H., Halifax Academy, Nova Scotia.....	1885
MACKAY, GEO. H., Nantucket, Mass.....	1890
MACOUN, Prof. J., Geol. and Nat. Hist. Surv., Ottawa, Can.....	1883
MCGREGOR, R. C., 2841 Champa St., Denver, Col.....	1889
MCLENNAN, CHAS. A., Truro, Nova Scotia.....	1889
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MALI, CHARLES M., 329 Broadway, New York City.....	1889
MARSHALL, ALFRED, 115 Liberty St., New York City.....	1886
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MATHER, SIDNEY G., Morristown, N. J.....	1890
MERRIAM, Miss FLORENCE A., Locust Grove, Lewis Co., N. Y.....	1885
MERRILL, HARRY, Bangor, Maine.....	1883
METCALFE, WM. C., 21 Cortlandt St., New York City.....	1886
MILLER, G. S., Jr., Peterboro, N. Y.....	1886
MILLER, Mrs. OLIVE THORNE, 244 Macon St., Brooklyn, N. Y.....	1887
*MINOT, H. D., St. Paul, Minn.....	1883
MOORE, J. PERCY, 1931 Judson Place, Philadelphia, Pa.....	1886
MORCOM, G. FREAM, 870 North Park Ave., Chicago, Ill.....	1886
MORRIS, GEO. SPENCER, Olney, Philadelphia, Pa.....	1887
MORRIS, ROBT. O., Springfield, Mass.....	1888
MORTIMER, BENJAMIN, 348 Lafayette Ave., Brooklyn, N. Y.....	1888
MURDOCH, JOHN, Smiths. Inst., Washington, D. C.....	1883
NICHOLAS, Dr. GEORGE LAWRENCE, 1627 Madison Ave., New York City.....	1888
NICHOLS, J. M., Middletown, Conn.....	1890
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NORTON, RICHARD, Cambridge, Mass.....	1888

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ÖBERHOLSER, HARRY C., Wooster, Ohio.....	1888
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PAINE, AUGUSTUS G., Jr., Willsborough, N. Y.....	1886
PALMER, T. S., Dept. of Agriculture, Washington, D. C.....	1888
PALMER, WM., U. S. Nat. Mus., Washington, D. C.....	1888
PANNEPACKER, D. E., 2513 North 12th St., Philadelphia, Pa.....	1888
PARK, AUSTIN F., 31 Boardman Building, Troy, N. Y.....	1885
PARK, J. T., Warner, Tenn.....	1890
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PEACOCK, W. F., Marysville, Cal.....	1888
PECK, E. B., Brockport, N. Y.....	1890
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PERRY, TROUP D., 22 Bull St., Savannah, Ga.....	1889
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REED, J. HARRIS, Chester, Pa.....	1890
RESSELL, CYRUS B., Ercildown, Chester Co., Pa.....	1888
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RIDGWAY, JNO. L., U. S. Geol. Surv., Washington, D. C.....	1890
RIECKER, ERNST, 900 South 4th St., St. Louis, Mo.....	1888
RIKER, C. B., South Orange, N. J.....	1885
RILEY, Prof. C. V., U. S. Entomologist, Washington, D. C.....	1885

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RIVES, DR. WM. C., Newport, R. I.....	1885
ROBBINS, WM. A., 528 Golden Gate Ave., San Francisco, Cala.....	1888
ROBERTS, W. F., 503 E St., N. W., Washington, D. C.....	1888
ROOSEVELT, THEODORE, Oyster Bay, Queens Co., N. Y.....	1888
ROWLAND, THOS., 182 6th Ave., New York City.....	1890
ROWLEY, J., JR., Am. Mus. Nat. Hist., New York City.....	1889
RUSSELL, GEO. C., 144 West 7th St., Erie, Pa.....	1888
SAGE, HENRY M., Yale Univ., New Haven, Conn.....	1885
SAUNDERS, DE ALTON, Alfred Centre, N. Y.....	1889
SCHICK, CHAS. S., Sea Isle City, N. J.....	1889
SCHLEGEL, MISS MATILDE, 134 16th St., Buffalo, N. Y.....	1889
SCHURR, THEO. A., 66 Grand St., Waterbury, Conn.....	1888
SCOTT, W. L., 86 Sparks St., Ottawa, Can.....	1883
SEE, ABRAM W., Arlington, N. J.....	1888
SEELY, HENRY H., Middlebury, Vt.....	1890
SEITER, PHIL. J., Chattanooga, Tenn.....	1888
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SHORES, DR. E. I., Soldiers' Home, Hampton, Va.....	1883
SISSENÈRE, OSCAR, Foreign Dept. Mutual Life Ins. Co., New York City.....	1889
SLADE, JOHN A., 1134 Herkimer St., Brooklyn, N. Y.....	1888
*SMALL, EDGAR A., Hagerstown, Md.....	1883
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SMITH, S. SIDNEY, 59 Wall St., New York City.....	1888
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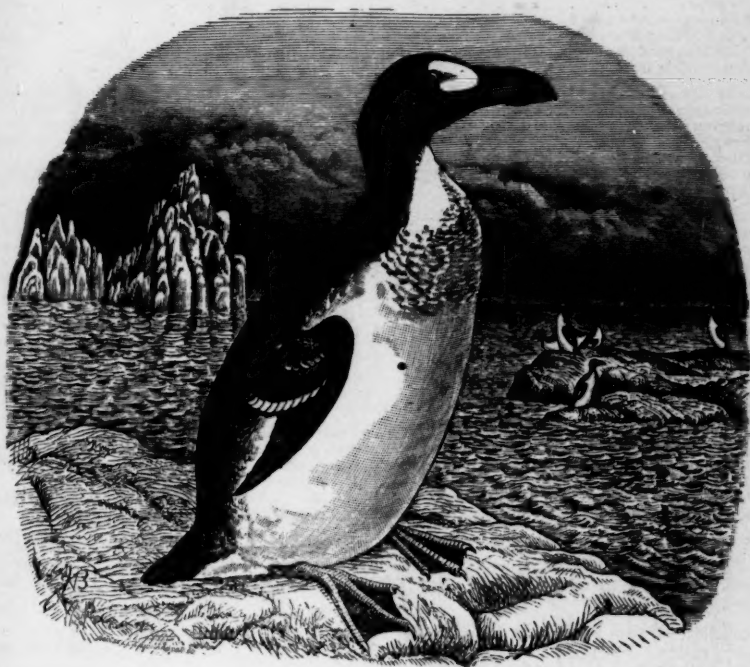
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F. V. J. PETERSON, LITH.

KETTERLINUS, PHILADA.

ICTERUS NORTHROPI ALLEN.

1. ADULT MALE.
($\frac{2}{3}$ NAT. SIZE.)

2 YOUNG MALE.
($\frac{3}{5}$ NAT. SIZE.)

THE AUK:

A QUARTERLY JOURNAL OF

ORNITHOLOGY.

VOL. VIII.

JANUARY, 1891.

No. I.

A STUDY OF FLORIDA GALLINULES, WITH SOME NOTES ON A NEST FOUND AT CAMBRIDGE, MASSACHUSETTS.

BY WILLIAM BREWSTER.

EARLY in June, 1889, while wading about in the Fresh Pond swamps on the outskirts of Cambridge, I heard one afternoon an unfamiliar bird cry. It was a succession of hen-like *cucks* given slowly, but in connected series, and sometimes ending with a prolonged, drawling *kel-ar-r*, *krel-ar-r*, suggestive of discontent, if not positive suffering, on the part of the bird. The voice was so loud and strong that it might have been heard nearly or quite half a mile away. Several times afterward during the next few days this strange cry was heard, always in the same place—a bed of cat-tail flags growing near the middle of a wide, flooded meadow. In company with Mr. Faxon and Mr. Torrey I made repeated efforts to find the bird but we failed to obtain any clue to its identity.

It was not until the evening of May 18, 1890, that we again heard this mysterious cry, this time in a swamp about an eighth of a mile from the marsh just mentioned. It was repeated at frequent intervals, and at length was answered by a second bird which Mr. Frank M. Chapman, who was with us at the time, at once declared to be a Florida Gallinule. The fact that this second cry was uttered immediately after the first, apparently in reply to it, and that, while differing in form, it resembled

the first in tone, led us to conjecture that both birds were Gallinules, the variation in their notes being due to a difference of sex. This surmise proved correct, for both were seen before many days passed, and were watched in the act of uttering the cries just mentioned as well as making other sounds that will be described later.

Their chosen haunt was a swamp about five acres in extent, covered with dense beds of cat-tail flags and thickets of low willows, among which were many pools and ditches of open water three or four feet in depth connected by a network of muskrat run-ways. The only really dry places were the tops of the numerous large tussocks and scattered houses of the muskrats, for among the willows and cat-tails the water was everywhere from six to twelve inches deep. The swamp was bordered on one side by a railroad, on the next by a high knoll, on the third by partially submerged woods of dead or dying maples, while on the fourth side an expanse of marshy ground stretched away for hundreds of yards to the shores of a pond. The area covered most thickly with flags and willows was separated from the maple swamp by a ditch, broad, straight and practically free from all vegetation save duck-weed, which formed an emerald carpet on the surface of the brown, stagnant water.

The Gallinules, for reasons best known to themselves, paid frequent visits to the flooded woods, always crossing and recrossing the ditch at a certain spot where an island, or rather raft, of floating vegetation entangled among the stems of a half-dead bush, afforded some slight cover as well as a convenient place for feeding and basking in the sun. The knoll just mentioned commanded an unobstructed view of this ditch, and we soon found that by lying still on the grass or crouching behind a cluster of alders we could watch the birds from a distance of less than forty yards without danger of alarming them.

Sometimes one appeared, sometimes the other, but the male the more frequently. He was a truly beautiful creature. With the exception of the yellow tip, his bill was scarlet, and this color extended back over a broad frontal shield which at a little distance looked like the red comb of a laying hen. At every movement of the head this brilliant color flashed like a flame. When he swam in under the bushes it glowed in the dense shade like a living coal, appearing and disappearing as he turned

toward or from us, and often catching the eye when all other trace of him was lost. In the sunlight his breast appeared to be of a rich bluish plum color, at other times slaty. The legs were greenish yellow, the head black, the neck nearly so, the wings and back cinnamon or reddish brown.

He rarely crossed the ditch without stopping at the island to bathe. Standing at the water's edge, with a quick plunge and upward fling of the head he scattered the drops over his back in a shining shower, opening and trembling his wings as the water fell. After repeating this performance five or six times in rapid succession, he rested a moment, and then went through it once more. After his plumage became thoroughly soaked, he proceeded to dress it, running each feather separately through his bill. This elaborate toilet occupied a considerable time, often lasting as long as fifteen minutes. When it was completed to his satisfaction, he would start off to feed again.

His manner of swimming and of feeding from the surface of the water was very like that of a Coot. He sat high and accompanied the strokes of the feet with a forward-and-backward nodding motion of the head and neck, accentuated at times as he reached out to seize some tempting morsel. On land he walked like a Rail, threading his way deftly among the stems of the bushes and tall rushes, stepping daintily, lifting and putting down his feet slowly, and almost incessantly jerking up his tail with a quick, nervous motion which caused the under coverts to flash like the sudden flirt of a handkerchief. As he picked his food from the vegetation at his feet, the head and neck were shot forward and downward at intervals of about a second, with a peculiarly vivid, eager motion. His manner of walking and feeding also suggested that of the Guinea-hen, the body being carried low and in a crouching attitude, while the movements of the head partook of that furtive swiftness which is so characteristic of this barnyard fowl.

Our Gallinule at most times, whether in action or repose, was a bird of slender shape and graceful outline, his carriage light yet firm, the play of the body lithe and strong. While preening his feathers, however, his attitude was often stiff and awkward, and the ruffling of his plumage made him appear nearly as portly as a duck. Again, the motion of flight was ludicrously awkward and uncouth. When, frightened by a glimpse of us through the

flags, he rose and flew with legs hanging down, wing-beats feeble and labored, the whole bearing was indicative of strain and exhaustion, which received an added emphasis from the abrupt reckless drop into the bushes which ended the flight.

Late one afternoon we suddenly heard a great outcry, and soon our pair of Gallinules appeared; the female, who was much the plainer-colored in every respect, swimming swiftly, her tail lowered and about in line with the back; the male flapping his wings on the water in his eagerness to overtake her. This he soon succeeded in doing, but just as he clutched at her with open bill, evidently with amorous designs, she eluded him by a sudden clever turn. He then swam round her in a narrow circle, carrying his tail wide-spread and erect, his neck arched, his scarlet front fairly blazing and apparently much enlarged and inflated. Seeing that she would not permit his approaches, he soon gave over the pursuit and returned to his favorite raft, while the female swam into the bushes. During the chase one of the birds, presumably the male, uttered repeatedly the following cry: *ticket—ticket—ticket—ticket* (six to eight repetitions each time). This was doubtless a wooing note, for we heard it on no other occasion.

The calls of these Gallinules were so varied and complex that it seems hopeless to attempt a full description of them. I certainly know of no other bird which utters so many different sounds. Sometimes they gave four or five loud harsh screams, very like those of a hen in the clutches of a Hawk, only slower and at longer intervals; sometimes a series of sounds closely resembling those made by a brooding hen when disturbed, but louder and sharper. Then would succeed a number of querulous, complaining cries, intermingled with subdued clucking. Again I heard something which sounded like this: *kr-r-r-r-r*, *kruc-kruc*, *krar-r*; *kh-kh-kh-kh-kea-kea*, delivered rapidly and falling in pitch toward the end. Shorter notes were a single, abrupt, explosive *kup*, very like the cry given by a startled frog just as he jumps into the water, and a low *klōc-klōc* or *klōc-klōc-klōc*. Speaking generally, the notes were all loud, harsh, and discordant, and nearly all curiously hen-like.

At intervals of perhaps half an hour during the greater part of the day the two birds called to one another from various parts of the swamp, evidently for the purpose of ascertaining each other's

whereabouts. They were occasionally answered by a pair in a neighboring swamp and these in turn by a third pair further off. In the early morning and late afternoon their calls were frequent and at times nearly incessant. They ceased almost entirely after nightfall, for the Florida Gallinule is apparently much less nocturnal than any of the Rails, if not so strictly diurnal as most of our birds.

Thus far our experience had proved interesting to be sure, but hardly unique, since the Florida Gallinule has several times been observed within the borders of the State. On the morning of June 5, however, Mr. Faxon and I came suddenly on the nest of the bird, never before found in Massachusetts. It was in the midst of a low, half-submerged thicket of *Spirea salicifolia*, intermingled with a few wild-rose bushes and alders, four or five feet in height. The foliage was scanty, and the tops of the bushes withered. Among their stems the water was from twelve to fifteen inches deep, quite free from grass, flags, tussocks, or any floating vegetation save a thin coating of duck-weed over the surface.

The uniform light color of the nest—a pale, bleached straw, nearly that of dead grass—thrown into relief against the background of dark water, rendered it so conspicuous an object that it caught my eye at a distance of fully twenty-five feet. Obviously the birds had disregarded, either deliberately or unconsciously, all considerations of protective coloring, and then, with apparently studied boldness, had rejected the safe shelter of tangled wild-rose thickets, dense beds of cat-tail flags and clusters of bushy-topped tussocks with which the marsh abounded, to build their home among scattered bushes in the centre of a nearly open pond!

With the exception of a little dry tussock-grass which formed a lining, the nest was composed wholly of cat-tail flags of last year's growth, all of which must have been brought by the Gallinules a distance of at least twenty-five yards, much of the way through bushes where the water was too deep for the birds to get any firm footing. As some of the stalks were nearly two feet in length, an inch thick at the base, and very heavy, the labor involved must have been great.

About the rim and outer edges of the nest the flags were broken or doubled in lengths of three to six inches, the ends of

which, projecting upward and outward, formed a fringe of blunt but bristling points that prevented the eggs from rolling, or being crowded, out. On one side this fringe was wanting for a space of two or three inches where a pathway about six inches in length led from the edge of the nest down a gentle incline to the water. This pathway was composed of broad flags from twenty to twenty-three inches long drawn out straight, with the slender tips firmly woven into the nest and the heavy water-soaked butts resting some distance away on the bottom. It was evident that these flags had been carefully selected and adjusted to form a sort of 'gang-plank' by means of which the bird might enter and leave the nest without disarranging or breaking the brittle material which formed its rim. The whole structure was saved from danger of submersion in case of a sudden rise of water by the buoyancy of its materials, but it derived its chief support from the stems of the bushes, among which it was firmly wedged. It certainly did not rest on the bottom, for I ran my hand under it and found everywhere a clear space of several inches in depth.

The measurements of the nest *in situ* were as follows: greatest external diameter, 20 inches; least external diameter, 13 inches; height of rim above the water, 4 inches; total height about 8 inches. The egg cavity was symmetrical but shallow ($2\frac{3}{8}$ inches in depth), and measured 7 inches across.

The twelve eggs composing the set filled the nest to the rim, but were arranged in a single tier—the ends pointing in every direction. They were perfectly clean, and there was no excrement in or about the nest. Three were fresh; a fourth contained a small embryo, dead and partially decomposed; the remaining eight were within a few days of hatching. When we found the nest the eggs were warm, but neither of the birds was seen although both came close about us at times under cover of the flags and bushes, uttering the frog-like *kup* and occasionally one or another of their louder cries; on the whole they made very little noise while we were in the swamp, much less, in fact, than on many occasions when there was nothing to disturb them. It should be mentioned, however, that for a week or more before the nest was found they had been getting more and more silent daily, and showed themselves less and less often. After the nest was taken—it was far too great a prize to be spared—there was another period of clamor and activity during which they appeared

to be building a second nest in a spot about fifty yards from the site of the first. Not caring to disturb them further we made no search for this second nest. Of its fate we know nothing definite, but there are good reasons for believing that the eggs were hatched and the young successfully reared.

A LIST OF BIRDS FROM NORTHEAST BORNEO,
WITH FIELD NOTES BY MR. C. F. ADAMS.

BY D. G. ELLIOT.

(Concluded from Vol. VII, p. 359.)

FAMILY PICIDÆ.

50. *Xylolepes validus*.

Picus validus TEMM. Plan. Col. pls. 378, 402.

Megapicus validus MALH. Mon. Pic. I, p. 28, pl. 9, figs. 4-7 (1861).

Xylolepes validus CAB. & HEIN. Mus. Hein. IV, 2, p. 108 (1863). —SALV.

Ucc. Born. p. 44 (1874).—SHARPE, Ibis, 1890, p. 6.

[Sandakan. Iris reddish orange.—C. F. A.]

51. *Chrysophlegma mentalis*.

Picus mentalis TEMM. Plan. Col. pl. 384.

Chloropicus mentalis MALH. Mon. Pic. II, p. 112, pl. 75, figs. 4, 5 (1862).

Callolophus mentalis SALV. Ucc. Born. p. 49 (1874).

[Suanlamba River. Iris brown.—C. F. A.]

52. *Chrysophlegma malaccensis*.

Picus malaccensis LATH. Ind. Orn. I, p. 241 (1790).

Chrysonotus miniatus EYTON, Proc. Zool. Soc. 1839, p. 106.

Callolophus malaccensis SALV. Ucc. Born. p. 50 (1874).

Chrysophlegma malaccense SHARPE, Ibis, 1890, p. 7.

[Kinabatangan River. Iris red.—C. F. A.]

53. *Thriponax javensis*.

Picus javensis HORSF. Trans. Linn. Soc. XIII, p. 172 (1821).

Dryopicus leucogaster MALH. Mon. Pic. I, p. 47, pl. 13, figs. 4, 5.

Thriponax javensis CAB. & HEIN. Mus. Hein. IV, Picturæ, p. 105 (1863).

—SALV. Ucc. Born. p. 52 (1874).—SHARPE, Ibis, 1890, p. 8.

[Sandakan. Iris red. Taken in large trees, bordering a clearing.—C. F. A.]

54. *Meiglyptes tukki*.

Picus tukki LESS. Rev. Zool. 1839, p. 167.

Phæopicus pectoralis MALH. Mon. Pic. II, p. 8, pl. 47, figs. 5, 6 (1862).

Meiglyptes tukki SALV. Ucc. Born. p. 57 (1874).—SHARPE, Ibis, 1890, p. 9.

[Bahala Island. Iris brown. Runs over the rough-barked trees, apparently searching for insects.—C. F. A.]

55. *Micropternus badius*.

Picus badius TEMM. Mus. Leyd.—SUND. Consp. Av. Pic. p. 91 (1866).

Phæopicus badius MALH. Mon. Pic. II, p. 6 (1862).

Meiglyptes badius SCLAT. Proc. Zool. Soc. 1863, p. 210.

Micropternus badius SALV. Ucc. Born. p. 58 (1874).—SHARPE, Ibis, 1890, p. 9.

[Sapagaya River. Iris brown.—C. F. A.]

FAMILY MEGALAIMIDÆ.

56. *Xantholœma duvaucelii*.

Bucco duvaucelii LESS. Trait. Orn. p. 164 (1831).

Xantholœma duvaucelii SALV. Ucc. Born. p. 38 (1874).—SHARPE, Ibis, 1890, p. 5.

[Sandakan. Iris brown. Legs greenish.—C. F. A.]

57. *Calorhamphus fuliginosus*.

Micropogon fuliginosus TEMM. Plan. Col. Texte, Liv. 83.

Calorhamphus sanguinolentus LESS. Rev. Zool. 1839, p. 139.

Calorhamphus fuliginosus MARSH, Mon. Cap. pl. 71 (1870-71).—SALV.

Ucc. Born. p. 39 (1874).—SHARPE, Ibis, 1890, p. 6.

[Sandakan. Iris brown. Legs salmon.—C. F. A.]

FAMILY BUCEROTIDÆ.

58. [*Buceros rhinoceros*.

Malay name, *Luke-läng*.

Male.—Base of horn and mandibles, cutting edges of latter, and a narrow longitudinal line on side of horn, curving upward with the upturned

part in front, black; top and sides of horn down to the black line and basal portion of the upper mandible in front of the black, bright carmine; lower sides and front of upturned horn, upper mandible in front of carmine, and lower mandible in front of black—fading off into white toward the tips—bright yellow, almost Indian yellow; bare skin around eye, black. Iris red.

Female.—The black at base of horn and the narrow longitudinal line of black wanting. The cutting edges of mandibles and bare skin around eye pinkish salmon. Iris white.

There seems to be an exudation of yellowish oil which colors the white feathers of the abdomen. In cases where this part of the plumage needed washing, on account of blood stains, the yellow color almost entirely disappeared.

No information of its nesting habits could be obtained from servants or guides. They are abundant in those regions along the rivers where fruit trees occur, and their peculiar, sonorous notes can be heard at a considerable distance. Although these birds were numerous and could easily be located by their calls, they were difficult to procure. So far as wariness is concerned, they can put a Crow to shame, and it is very seldom that one can be approached within gun-shot, the most successful way being to lie in wait for them under a fruit tree. Owing to their striking colors they are very conspicuous objects in the trees, a fact of which they seem to be aware.

Their flight consists of several rapid wing beats, followed by majestic sailing, during which they gradually rise to a greater elevation. The general color being jet black, they are clearly outlined against the sky, the horn reminding one of a figurehead, and as with firmly set wings and outstretched necks they sail high overhead, they recall the appearance of a full-rigged ship with all canvas set, probably though more on account of their sturdiness than grace. The sound produced by their wings during flight is astonishingly loud and often betrays their presence to a collector.

As showing the extreme pneumaticity of the bones of this species, it may be stated that in one case a No. 5 shot passed clear through the humerus without breaking it.—C. F. A.]

59. *Anthroceros convexus*.

Buceros convexus TEMM. Plan. Col. pl. 530. — SALV. Ucc. Born. p. 80 (1874).

Anthroceros convexus ELLIOT, Mon. Bucer. pl. xii.

[Kinabatangan River. Iris dark red; eyelids black; bare skin around eye purplish blue; that at angle of jaws bluish flesh-color.

Commonly of wider distribution than the other species of Hornbills taken, being found on some of the small islands in Sandakan Harbor and near the coast as well as in the up river regions.—C. F. A.]

60. *Anorrhinus galeritus*.

Buceros galeritus TEMM. Plan. Col. pl. 520.

Anorrhinus galeritus SALV. Ucc. Born. p. 79 (1874). — ELLIOT, Mon. Bucer. pl. 42. — SHARPE, Ibis, 1890, p. 16.

[Sandakan. Iris deep wine red. Eyelids black. Skin above and behind eyes, and over angle of jaw, fleshy white. Other parts dark blue. Usually found feeding in the same trees as the last species, but less noisy and more stealthy in its movements.—C. F. A.]

FAMILY ALCEDINIDÆ.

61. *Alcedo meninting*.

Alcedo meninting HORSE. Trans. Linn. Soc. XIII, p. 172 (1821). — SALV. Ucc. Born, p. 93 (1874). — SHARPE, Ibis, 1890, p. 18.

Alcedo asiatica SHARPE, Mon. Alced. pl. 5.

[Sandakan. Iris dark brown. Frequents small creeks which empty into the rivers or near river sources. It has the habit of sitting on some dead twig or snag a few feet above the surface of the water watching for its prey in true Kingfisher style.—C. F. A.]

62. *Halcyon coromanda*.

Alcedo coromanda LATH. Ind. Orn. I, p. 252 (1790).

Callialcyon coromanda SALV. Ucc. Born, p. 101 (1874).

Halcyon coromanda SHARPE, Mon. Alced. pl. 57; *id.* Ibis, 1890, p. 20.

[Sandakan. Iris brown. Bill and legs vermillion. The only specimens seen were taken along the hilly side of Sandakan Harbor.—C. F. A.]

63. *Halcyon pileata*.

Alcedo pileata BODD. Tab. Pl. Enl. p. 41 (1783).

Entomobia pileata SALV. Ucc. Born. p. 102 (1874).

Halcyon pileata SHARPE, Mon. Alced. pl. 62; *id.* Ibis, 1890, p. 20.

[Sapagaya River. Iris brown. Bill and legs red. Found along the larger streams, and, so far as observed, seems strictly piscivorous. Very wary, seldom allowing a boat to approach within gunshot.—C. F. A.]

64. *Halcyon concreta*.

Dacelo concreta TEMM. Plan. Col. pl. 346.

Caridagrus concretus SALV. Ucc. Born. p. 102 (1874).

Halcyon concreta SHARPE, Mon. Alced. pl. 83; *id.* Ibis, 1890, p. 21.

[Suanlamba River. Iris brown. Feet and legs yellow. The most common species of Kingfisher taken. Found in low, thickly wooded regions at considerable distances from streams.—C. F. A.]

65. *Nyctiornis amicta*.

Merops amictus TEMM. Plan. Col. pl. 310.

Nyctiornis amicta SALV. Ucc. Born. p. 91 (1874).—DRESSER, Mon. Mer. pls. 1, 2, p. 3 (1884-86).—SHARPE, Ibis, 1890, p. 18.

[Sandakan River. Iris golden yellow. Of general distribution but rather uncommon.—C. F. A.]

FAMILY CORACIDÆ.

66. *Eurystomus orientalis*.

Coracias orientalis LINN. Syst. Nat. I, p. 159 (1766).

Eurystomus orientalis SALV. Ucc. Born. p. 105 (1874).—SHARPE, Ibis 1890, p. 21.

[Sandakan. Iris brown; bill, legs, and feet light red. A conspicuous bird, often seen perched on the top of some large dead tree in a clearing, occasionally leaving its place to make a short excursion after insects.—C. F. A.]

FAMILY CUCULIDÆ.

67. *Rhopodytes erythrognathus*.

Phenicophæus erythrognathus HARTL. Verz. Mus. Brem. p. 95 (1844).

Rhamphococcyx erythrognathus SALV. Ucc. Born. p. 74 (1874).

Rhopodytes erythrognathus SHARPE, Proc. Zool. Soc. 1873, p. 604; *id.* Ibis, 1890, p. 12.

[Suanlamba River. Iris pale blue in the male, golden yellow in the female. Skin around eye light maroon. Maxilla and tip of mandible pale green.—C. F. A.]

68. *Rhinortha chlorophæa*.

Cuculus chlorophæus RAFF. Trans. Linn. Soc. XIII, p. 288 (1822).

Rhinortha chlorophæa SALV. Ucc. Born. p. 69 (1874).—SHARPE, Ibis, 1890 p. 13.

[Suanlamba River. Iris dark brown. Skin around eye emerald green, bill darker.—C. F. A.]

69. *Zanclostomus javanicus*.

Phenicophæus javanicus HORSE. Trans. Linn. Soc. XIII, p. 178 (1822).

Zanclostomus javanicus SALV. Ucc. Born. p. 75 (1874).—SHARPE, Ibis, 1890, p. 13.

[Kinabatangan River. Iris red Shot in coarse grass or rushes growing in swampy places.—C. F. A.]

ORDER PSITTACI.

FAMILY PSITTACIDÆ.

70. *Palæornis longicauda*.

Psittacus longicauda BODD. Tabl. Pl. Enl. 887 (1783).

Palæornis longicauda G. R. GRAY, Gen. Bds. II, p. 410 (1846). — SALV. Ucc. Born. p. 22 (1874).—SHARPE, Ibis, 1877, p. 9; *ib.* 1890, p. 1.

[Sandakan River. The only specimens seen were in an old clearing where they alighted on the tops of some high trees left standing. Occasionally several would start off together, flying very swiftly as they circled about, keeping up a continual chatter, and then re-alight.—C. F. A.]

71. *Loriculus galgulus*.

Psittacus galgulus LINN. Syst. Nat. I, 150 (1766).

Coryllis galgulus FINSCH, Die Papag. II, p. 699 (1868).

Loriculus galgulus SALV. Ucc. Born. p. 26 (1874). — SHARPE, Ibis, 1890, p. 1.

[Sandakan River. Iris brown. Apparently not common.—C. F. A.]

ORDER ACCIPITRES.

FAMILY STRIGIDÆ.

72. *Ketupa ketupa*.

Strix ketupa HORSF. Trans. Linn. Soc. XIII, p. 141 (1821).

Ketupa javanensis LESS. Trait. Ornith. p. 114 (1831).—SALV. Ucc. Born. p. 20 (1874).—SHARPE, Cat. B. p. 8 (1875).

Strix ceylonensis LATH. (*nec* GMEL.) Ind. Orn. I, p. 52, sp. 3 (1790). — TEMM. Plan. Col. pl. 74.

[Suanlamba River. Iris yellow. Malay name, *Boor'-ung han'-tu*. The Malays of the country are quite timid if, while out at night, the notes of this Owl are heard, as they think the spirits of the departed manifest their presence through the agency of these birds.—C. F. A.]

73. *Syrnium myrtha*.

Ciccaba myrtha BON. Consp. Av. I, 44.—SALV. Ucc. Born. p. 21 (1874).

Myrtha sumatrana BON. Rev. Mag. Zool. 1854, p. 541.

Syrnium myrtha SHARPE, Cat. B. p. 264 (1875).

A single specimen of *Syrnium* I refer to *S. myrtha* described by Bonaparte (*l. c.*), as it seems considerably larger than *S. leptogrammicum*, and differs in having the breast dark chestnut brown barred with black, and the entire under parts white barred narrowly with black, agreeing in these respects with Bonaparte's description. Total length about 17 in.; wing, $12\frac{1}{2}$; tail, $7\frac{1}{2}$.

[Sapagaya River. Iris brown. Only one specimen was seen, which was taken near a path cut through a dense jungle.—C. F. A.]

FAMILY FALCONIDÆ.

74. *Spilornis pallidus*.

Spilornis pallidus WALL, Ibis, 1872, p. 363. — SHARPE, Cat. B. I, p. 290 (1874).

Very closely resembling *S. bacha* Daud., but apparently a smaller bird.

[Iris, lores, and legs yellow. Found sitting on stumps in old clearings, usually with the crest erect.—C. F. A.]

75. *Butastur indicus*.

Falco indicus GMEL. Syst. Nat. Suppl. p. 32 (1787).

Falco poliogenys TEMM. Plan. Col. pl. 325.

Butastur indicus SHARPE, Cat. B. I, 297 (1874); *id.* Ibis, 1889, p. 72.

[Sandakan. Iris light brown. Legs yellow. Common in open places.—C. F. A.]

ORDER COLUMBÆ.

FAMILY TRERONIDÆ.

76. *Treron nasica*.

Columba curvirostra GMEL. Syst. Nat. I, p. 777 (1788).

Treron nasica SCHLEG. Tidgsch. Dierk. I, p. 67 (1863).—SALV. Ucc. Born. p. 283 (1874).

[Sandakan. Iris dark green. Skin around eyes and bill, green. Lores and feet carmine. Found in small flocks, feeding on berries, etc.—C. F. A.]

77. *Treron olax*.

Columba olax TEMM. Plan. Col. pl. 241.

Treron olax SALV. Ucc. Born. p. 289 (1874).

[Suanlamba River. Iris pale yellow. Similar in habits to *T. nasica*, preferring open places where fruit-bearing bushes grow.—C. F. A.]

78. *Ptilopus jambu*.

Columba jambu GMEL. Syst. Nat. I, p. 784 (1788).

Ptilopus jambu SALV. Ucc. Born. p. 289 (1874).—ELLIOT, Proc. Zool. Soc. 1878, p. 554.—SHARPE, Ibis, 1889, p. 134.

[Suanlamba River. Iris golden yellow. Usually found on the ground in dense jungle. When startled it rises with a strong noisy flight, perhaps to stop an instant on a low branch, take a hurried look at the intruder, and then disappear. It seems to feed on fallen fruit knocked off by monkeys, Hornbills, etc.—C. F. A.]

79. *Carpophaga ænea*.

Columba ænea LINN. Syst. Nat. I, p. 283 (1766).

Carpophaga ænea SALV. Ucc. Born. p. 290 (1874).—SHARPE, Ibis, 1890 p. 134.

[Kinabatangan River. Iris and legs carmine. This fine Pigeon is very common and of general distribution. It may usually be found feeding in the same trees with the Hornbills, and what with the noise of their wings as the members of a large flock fly from branch to branch and the constant rain of the fruit which is knocked off, they can be heard at a considerable distance. Sometimes while feeding, a monkey will go dashing toward them, causing them to rise with a whirl, but after circling about a few times they re-alight in a safe place. As monkeys are numerous in Borneo, and many of them actually feed in the same trees with the Pigeons, it seems, considering the abundance of the latter, that in this locality at least monkeys do not seriously interfere with them.—C. F. A.]

ORDER GALLINÆ.

FAMILY PHASIANIDÆ.

So. [*Argus grayi*.

Malay name, *Chow-h-o-i*. Of pretty general distribution, seeming to prefer the hilly, broken regions. Although this bird may frequently be heard, it is very difficult to procure, either by means of the gun or in snares which as a rule are very effective in taking other gallinaceous birds and small mammals found in the same regions. The Malay name somewhat resembles its notes, when the second syllable is strongly accented and prolonged. The tone of its voice is much like that of our domestic peacock.—C. F. A.]

81. *Euplocomus ignitus*.

Euplocomus ignitus LATH. Ind. Ornith. p. lxi (1801). — ELLIOT, Ibis, 1878, p. 411.

Euplocomus nobilis SCLAT. Proc. Zool. Soc. 1863, p. 119, pl. xvi. — ELLIOT, Mon. Phas. pl. xxvii (1872). — SALV. Ucc. Born. p. 306 (1874).

[Kinabatangan River. Iris red. Bare skin of head purplish blue. Malay name, *Eidm-u-tan*. Common in up-river regions. The specimens taken were caught in snares, as used by the Malays of the country. — C. F. A.]

FAMILY PERDICIDÆ.

82. *Arboriphila charltoni*.

Perdix charltoni BLYTH, Ann. Mag. Nat. Hist. XVI, p. 230 (1845).

Arboricola charltoni HUME & MARSH, Game B. Ind. II, p. 93 (1879).

Arboriphila charltoni SHARPE, Ibis, 1890, p. 140.

[Sapagaya River. Iris brown. Legs yellowish olive. A quiet bird, inhabiting the river districts. Not shy, so that the collector does not need to resort to the snare in order to obtain specimens, as opportunities for shooting are rather common. Most of the specimens procured, however, were taken from snares set for other species. — C. F. A.]

83. [*Rolulus roulroul*].

Iris brown; eyelids and legs carmine. This beautiful species seems to prefer the level districts near the rivers, where its pleasing, powerful, liquid whistle may be heard from morning until night. Being less shy than the Pheasants, it is not unfrequently seen in small flocks running through the underbrush. When frightened, the males elevate the crest and carry their bodies nearly erect, as they make their short runs, suddenly coming to a standstill with a jerk, after the fashion of our Quails. — C. F. A.]

ORDER LIMICOLÆ.

FAMILY CHARADRIIDÆ.

84. *Eudromias veredus*.

Cursorius isabellinus HORSF. (nec TEMM.) Trans. Linn. Soc. XIII, p. 137 (1821).

Charadrius veredus GOULD, Proc. Zool. Soc. 1848, p. 38.

Charadrius xanthochilus BLYTH, Ibis, 1865, p. 34.

Eudromias veredus WALD. Trans. Zool. Soc. VIII, p. 88 (1872).—SALV. Ucc. Born. p. 315 (1874).

[Bahala Island. Iris brown.—C. F. A.]

85. *Ægialitis peronii*.

Charadrius peronii (TEMM.) BON. Compt. Rend. XLIII, p. 417, sp. 68 (1856).

Ægialitis peronii WALD. Trans. Zool. Soc. VIII, p. 90, pl. 10, fig. 2. (1872).—SALV. Ucc. Born. p. 315 (1874).—SHARPE, Ibis, 1890, p. 142.

[Bahala Island. Iris brown.—C. F. A.]

86. [*Actitis hypoleucos*.

Bahala Island. Iris brown. Not uncommon.—C. F. A.]

ORDER ALECTORIDES.

FAMILY RALLIDÆ.

87. *Rallina fasciata*.

Rallus fasciata RAFF. Trans. Linn. Soc. XIII, p. 328 (1822).

Gallinula euryzona TEMM. Plan. Col. p. 417.

Rallina fasciata G. R. GRAY, Gen. B. p. 120 (1855).—SALV. Ucc. Born. p. 337 (1874).—SHARPE, Ibis, 1890, p. 145.

[Sapagaya River. Iris and eyelids red; legs reddish. Only one specimen taken, which was shot in a dense second growth in the swampy part of an old clearing.—C. F. A.]

NOTE.—Mr. F. A. Lucas of Washington informs me that he has received from Mr. Adams two skeletons of *Cypselus subfurcatus*. The locality in Borneo whence they came is not given. This information was received too late to enable me to insert the species in its proper place.—D. G. E.

THE HABITS OF THE GOLDEN PLOVER (*CHARADRIUS DOMINICUS*) IN MASSACHUSETTS.

BY GEORGE H. MACKAY.

AMONG the water birds which annually migrate along the coast of New England, none to me possesses greater interest than *Charadrius dominicus*, the American Golden Plover. One reason for this is its prolonged migration, extending from the shores of the Arctic Ocean to the Argentine Republic, and probably to Patagonia, a distance of nearly seven thousand miles, during which it apparently makes no stop after leaving Nova Scotia, unless compelled to halt by storms or hurricanes, until it reaches its destination. It is while making this migration that their appearance is so eagerly watched for by the many sportsmen on the New England coast, the great uncertainty of their landing in any considerable numbers adding much to the interest and importance of their capture. The reason they are not now as abundant as formerly, is, first, the absence of suitable feeding ground, and secondly the eagerness with which they are pursued, allowing them no opportunity to become attached to any one locality. Civilization has encroached upon and absorbed so many of the fields bordering on the coast, to which they used to resort, that there is little room now left for them.

On the Island of Nantucket I notice a very great change in the amount of ground suitable for them, there being now not more than one-quarter as much as formerly. This in part is due to the increase of the pine trees, scrub oak, bushes, and beach grass which have greatly encroached upon the open fields, and in part to the absence of considerable numbers of sheep and cattle which formerly roamed at large and kept down the grass; for the Golden Plover dislikes to alight or run in grass which is high enough to touch the feathers of the breast. Another cause is the fact that the sportsmen go out to shoot them at the commencement of the storm which causes them to seek land, and follow them up unceasingly until a change of weather gives the harassed birds an opportunity to continue their interrupted migration. This mode of procedure is just the reverse of what prevailed in former times, when few people pursued them. They were then

allowed to remain undisturbed on alighting, and the first comers called down others that were passing; they thus became accustomed and attached to certain localities, and as a rule remained in varying numbers on the Island of Nantucket until late into November. As many of the same birds doubtless pass over the same ground year after year, they naturally shun the localities where they have been harassed, and becoming leaders of the migratory flocks, do not stop unless compelled by stress of weather. Of late years it has become quite evident that they have no intention of stopping on the New England coast after leaving Nova Scotia, as their course is considerably outside of it (two hundred miles or more). Their presence here, therefore, is purely the result of tempestuous weather, as the occurrence of south-easterly or north-easterly storms, thunder and lightning with rain, or thick fog with a south-west wind, while they are on their passage, by which they are driven from their course, confused, and deflected to the westward; in which event they pass along the New England coast, and over the outlying islands and promontories. They are there eagerly pursued and many killed.

When in Massachusetts they frequent the extensive marshes, and the large tract known as the common pasture near Newburyport; on Cape Cod they seem to prefer the long reach of sandy hills, old fields where the grass is short and the vegetation scanty, sand flats left by the receding tide, ploughed fields, and any burnt tracts which are clear of trees and bushes. On Nantucket Island they mostly prefer the south and west portions of the Island, where there are extensive and undulating plains interspersed with fresh ponds. It is here that I have particularly observed *C. dominicus* during the past sixteen years. When on the ground they run rapidly and gracefully, and soon scatter on alighting. After running a few yards they suddenly stop, hold the head erect, and look around, all the movements being very quick. In feeding, they seem to strike at the object with a motion that reminds one of a Loon or Grebe commencing to dive.

Various authorities state that along the Atlantic coast the food of the Golden Plover consists principally of grasshoppers, on which they become very fat. I can only say, in answer to this statement, that in my experience I have never seen them eat any, and I have watched them when on the ground quite near, as well as through a strong a field glass. I have also examined

the stomachs of a good many which I have shot on Nantucket, and have never found any grasshoppers in them, nor in fact anything but crickets (which seem their principal food there), grass seeds, a little vegetable matter, like seaweed, coarse sand, and small stones. I have also frequently shot them with the vent stained purple, probably from the berries of the *Empetrum nigrum*. I have rarely seen a poor or lean bird that landed while making the southern migration. While they are not all in the same condition, they are, as a rule, quite fat. The eye is dark hazel, very lustrous, and appealing, and is their most beautiful feature to my mind. Those birds killed soon after landing have the bottoms of their feet quite black; after living on the Island awhile, they turn whitish. I have no reason to offer for this change.

Their local names along the coast are numerous, and among them are Greenback, Palebelly, Palebreast, Greenhead, Bullhead, Toadhead, Frostbird, Blackbreast, and Threetoes.

When scattered over considerable ground, as is usual after they have been any length of time on their feeding ground, every bird apparently on its own hook, if alarmed, a note is sounded; they then rise so as to meet as soon as possible at a common centre, which gained, away they go in a compact body. When high up in the air, flying on their migration, I have often noticed the flocks assume shapes that reminded me of the flight of Geese; they also fly in the form of a cluster, with one or more single lines out behind; also broadside in long straight lines, with an apparent velocity of about one and a half miles a minute, measured by the eye as they pass along the headlands. When flying near the ground they course over it at a high rate of speed, in every variety of form, the shape of the flock constantly changing, and frequently following every undulation of the surface, stopping suddenly and alighting when a favorable spot is noticed. They are extremely gregarious, and I have had the same flock return to my decoys as many as four times, after some of their number had been shot each time. When approaching the decoys every bird seems to be whistling, or, as I have often expressed it, uttering a note like *coodle, coodle, coodle*. During the middle of the day they are fond of seeking the margins of ponds, where they sit quietly for a long time, if undisturbed. When disturbed they are almost certain to return, in a short time, to the same spot from which they

have been started, that is, if they have been resting or feeding there any length of time. When suspicious, it is very difficult to approach, decoy, or call them; if not harassed, they are as a rule quite tame and gentle, and can be easily driven up to with horse and wagon.

The young birds, or 'Palebellies' as they are called by the local gunners, are inferior in size to the old black-and-white-breasted birds. Their plumage is ashy gray all over, relieved with spots of pale yellow on the top of the head, back, and rump, they having none of the bolder and well-defined markings of the old birds, in which the white line of the forehead, running over and back of the eye down each side of the neck, is the most prominent at a distance. These young birds invariably appear wild and wary, much more so than the old ones. They are also very erratic in their movements and flight when with us. They usually will not pay so much attention to the decoys or call-whistle as do the old birds; and I have seen them, when very shy and after being disturbed, mount up into the air and nearly turn over on their backs while flying with great velocity. It is a noteworthy fact that, when a flock of these young birds is approaching, no dependence can be placed on their movements. They may sometimes sweep down within a few yards of the sportsman, passing with great rapidity over his head, all scattered; or down close to the stand and then up into the air; or they may turn suddenly. My experience has taught me not to wait, as is my custom with the older birds, to get them together before shooting, but to fire at them whenever and wherever I can, if they are within range. The older birds rarely indulge in any similar antics. These young birds seem to migrate by themselves, and at a later date than the old ones, not appearing in New England, as far as my experience shows, till from one week to four after the arrival of the older black-and-white-breasted birds. I have notes of one such landing, on the Island of Nantucket, as late as October 1, 1882. This, however, is the latest date I have ever known.

While I have continually shot the young birds on Nantucket, and in other parts of Massachusetts, their arrival is a much more uncertain event than that of the older birds, there being some years when I have seen none, and others only a few. I have never known a year when they were anything like as numerous as I have seen the older birds.

It is unusual to see any but scattering birds before the tenth of September; the years when they are not seen they undoubtedly pass outside of the coast line, with favorable weather. In order to convey some idea of the date when *C. dominicus* annually makes its appearance, I copy from the notes of a friend the dates of its arrival on Cape Cod, from 1858 to 1875, and on Nantucket from the latter year until 1890 from data of my own, thus covering a period of thirty-two years, there being no record for 1876.

- 1858 First birds shot Aug. 31; last birds shot Oct. 19.
1859. First birds shot Aug. 29; last birds shot Sept. 25.
1860. September. Some shooting during the month.
1861. First birds shot Sept. 5; last birds shot Oct. 12.
1862. No birds.
1863. No birds of any account until Sept. 5, when there was an immense flight.
1864. Some birds in September.
1865. No flight.
1866. A few birds in September; no flight.
1867. A flight Aug. 31; last birds shot Oct. 20.
1868. September. Only a few this year.
1869. No flight this year, and only a few birds killed.
1870. A flight Aug. 29; fair shooting until Oct. 6.
1871. First Plover shot Aug. 25; not a very good year.
1872. First birds shot Aug. 29. Hard southeast rain storm on night of 29th; small flight.
1873. First birds shot Aug. 23. A good many birds on Aug. 29.
1874. Scarcely any.
1875. First shot Aug. 30.
1877. First birds shot Aug. 27. Severe rain storm night of Aug. 26; small flight of Plover and Eskimo Curlew. Last birds shot Oct. 5.
1878. First birds shot Aug. 26; rain the night before; some Plover and Eskimo Curlew landed. Last birds shot Oct. 22.
1879. First birds shot Aug. 26; a number of Plover landed the night before. There were three or four small flights in September. Last Plover shot September 29.
1880. First Plover shot Aug. 26. Saw three on the 22d. Sept. 7, a large flight of old birds; shot 108 on the 7th and 8th. Sept. 9: raining and blowing last night; a flight went over the town of Nantucket, but did not stop. Last birds shot Sept. 28.
1881. First birds shot Aug. 16. Small flight Aug. 19; 300 to 400 birds landed; weather foggy; wind northeast; two heavy rain squalls in the afternoon. Sept. 2: a large flight of Plover and Eskimo Curlew landed last night; wind northeast and weather thick. No young birds this year. Last birds shot Sept. 10.

1882. First birds shot Aug. 22. Last birds shot Oct. 3. A great many *C. dominicus* passed over without landing during the week prior to Aug. 30. Sept. 25: last night a considerable flight of young birds; wind north-east, light rain; afterwards storming hard. Sept. 30: quite a flight of young birds landed in northeast rain storm; shot 50. Oct. 2: about 400 young birds landed on east end of Nantucket.

1883. Aug. 25: last night and to-day a large number of *C. dominicus* and Eskimo Curlew landed, in about equal numbers; a severe northeast storm. First flock of *C. dominicus* arrived Aug. 16.

1884. First birds shot Aug. 26. On July 28 John M. Winslow shot a lone *C. dominicus* which was emaciated, the earliest record of one being taken on Nantucket Island. Aug. 31, large flight went by in clear weather in the afternoon; wind light, southeast. The poorest year I have ever known.

1885. Aug. 23, first birds shot. Heard of two killed on Aug. 17. Last birds shot Sept. 23. Had only killed half a dozen young birds up to Sept. 1.

1886. First birds shot Aug. 22. August 24, a severe northeast storm with rain and lightning. The largest flight for a number of years; some two thousand birds landed. Only two young birds shot up to Sept. 12. Last birds shot (7 young birds) on Sept. 27.

1887. Aug. 25: considerable number of old birds landed; northeast rain storm last night; all gone the next day. First birds shot Aug. 28. Did not see a young bird this year.

1888. August 28: thunder shower last night; wind about south; a flight passing over the town; only a few scattering birds landed, as weather cleared at 10.30 P. M., with wind west by north; first Plover shot. Sept. 2: a small flight, but few landed; wind westerly, foggy; light rain at times until 7 A. M. when it cleared; for the past week large numbers of *C. dominicus* have been passing the Island every night; scarcely any landed. Last birds shot Sept. 24. No young birds this year.

1889. First birds shot Aug. 20. Quite a flight Aug. 23, but none landed. Sept. 11, small flight of *C. dominicus*; both old and young birds, and also some Eskimo Curlew. The poorest year I have ever known.

1890.* First birds shot Aug. 25. August 22 and 26 a flight; none stopped on either date; on the 26th the wind was south, raining. Only about fifty birds altogether shot on the Island. This makes the poorest yearly record up to date. Last birds shot Sept. 29. About half of above birds killed were young.

It will be noticed from the foregoing that the older birds of this species seem to come along with much more regularity than

* I have since learned that there was a flight of Golden Plover along Cape Cod Aug. 23, 1890. About 2500 birds (estimated) were seen, flying rather low; only a few scattering birds stopped, although the weather was thick, rainy, wind southeast; they were headed south. None were noted on Nantucket on this date.

the younger ones. It would seem to require certain conditions of weather, and time of migration to make the young birds land on our coast, and the rare occurrence of these conditions must account for the irregularity of their appearance.

The question may be asked why the Golden Plover remain, or come here at all. The answer is that they do not remain any longer than is absolutely necessary, and land only under stress of weather; for the moment a clear streak is visible on the western or northern horizon, at the end of the stormy weather which has forced them to land, and a few puffs announce that the wind is soon to change and the weather to clear, almost every bird takes flight from these inhospitable shores, mounts high into the air, and steers for the South; where many may have been yesterday, none remain today. When tired, in moderate weather, they have been known to alight on the ocean; at least so I have been informed by some of the men on the South Shoal Light-ship, which is anchored twenty-five miles off the south side of Nantucket Island.

J. P. Giraud, Jr., in his 'Birds of Long Island' states that the Golden Plover arrives there in the latter part of April, on the way to the North. I have, however, never seen any recorded, and have heard of but three *C. dominicus* being taken, in New England in the spring, one being on Nantucket, one at Dennis, Cape Cod, and one at Scituate, Mass. Personally I have never met with it at this season of the year.

As far as my observation shows on the Island of Nantucket, the Golden Plover usually seeks land about dusk and during the first half of the night. I can recall but three occasions when they landed during the daytime, and on two of those in very inconsiderable numbers. It is usual several times during the migrating period to hear them whistling as they pass low down over the town of Nantucket; but on these occasions, unless it is storming hard, they do not stop, but pass on, if the wind is fair (northeast). I have been many times disappointed on driving over the Plover ground at daylight on the following morning to find that no birds had stopped. In other words, it is a most difficult matter to 'hit the flight,' for it requires a combination of circumstances and weather which rarely happens, to enable one to obtain any number of these birds on the Atlantic coast.

In regard to the numbers of these birds formerly, and at the

present time, I would say that it is extremely difficult to arrive at any correct conclusion, this arises from the fact that the migration almost always passes by, or over the Island, after dark, and our means of judging is by comparison with others of the number of flocks heard whistling as they flew overhead. It is however certain that for a number of years fewer birds have stopped on the coast than formerly, and for a shorter period. We are, however, liable any year, when all the conditions are favorable, to have an immense landing.

To those interested in this direction I give the following result of some inquiry I made recently of two game dealers in Boston. About four years ago the shipment of Golden Plover, Eskimo Curlew, and Bartramian Sandpipers first commenced in the spring, and it has been on the increase up to date. Last spring (1890) these two firms received from Nebraska (principally), Saint Louis, and Texas (Fort Worth) *twenty barrels* of birds, one third of which were Golden Plover, two thirds Bartramian Sandpipers; *eight barrels* of Eskimo Curlew; *twelve barrels* of Eskimo Curlew and Golden Plover. As there are *twenty-five* dozen Curlew, and *sixty dozen* Plover each to a barrel, it will be realized what this means, if other large cities are similarly supplied. All were killed on their northern migration to their breeding grounds. Therefore while we may not be able now to answer the question: are they fewer than formerly, we shall be ably fitted to do so in a few years.

A LIST OF BIRDS OBSERVED AT SANTAREM. BRAZIL.

BY CLARENCE B. RIKER.

With Annotations by Frank M. Chapman.

(Continued from Vol. VII, p. 271.)

76. *Pipra aureola flaviceps* (Sch.).—Two adult males taken July, 1887, in low fruit-bearing trees growing in a semi-palm forest.

[I refer these specimens to *flaviceps*, as both exhibit a white spot on the outer rectrix. They are, however, indistinguishable from a Cayenne specimen.—F. M. C.]

77. *Pipra rubricapilla* Temm.—Common and gregarious.
78. *Chiroxiphia pareola* (Linn.).—Common in the second growth of the lowlands; not seen on the 'mountain'.
79. *Manacus manacus* (Linn.).—Common about campos and lowlands; not seen on the 'mountain.' In flying they make a humming noise with their wings and a cracking sound with their bills, the latter resembling the sound produced by the striking together of two pebbles.
80. *Heterocercus flavivertex* Pelz.—An immature male taken June 4, 1887.
81. *Tityra cayana* (Linn.).—A male taken July 15, 1887.
82. *Tityra semifasciata* (Spix).—A male and female taken in June, 1887.
83. *Tityra albitorques* Du Bus.—A male taken July 15, 1887. These birds frequent the treetops. The notes of this species and the two preceding are distinguished by a guttural, clucking sound.
- [84. *Hadrostomus minor* (Less.).—A male taken by Smith, March 26 1889.—F. M. C.]
85. *Pachyrhamphus atricapillus* (Gm.).—A female taken July 4, 1887.
- [86. *Pachyrhamphus rufus* (Bodd.).—A female taken by Williams has the grayish nuchal band very narrow but complete.—F. M. C.]
- [87. *Pachyrhamphus cinereus* (Bodd.).—"Santarem, June 5; common near the town.*]
88. *Lathria cinerea* (Vieill.).—Common on the 'mountain.' Their call, which resembles the syllables *we-we-you*, the two former with a rising, the latter with a falling, accent, was never heard except when the birds were startled by the report of a gun.
89. *Lipaugus simplex* (Licht.).—Common in the lowlands.
- [90. *Attila* *sp. incog.*—A female collected by Williams is apparently closely related to *A. citriniventris* Scl. The upper surface agrees with Sclater's description of the male of that species, but the lower parts are quite uniformly cinnamomeous, with the abdomen scarcely lighter than the breast, and the chin fulvous, not cinereous. It is not improbable that this bird may be the as yet undescribed female of *A. citriniventris*.—F. M. C.]
91. *Attila viridescens* Ridgw.
Attila viridescens RIDGW., Proc. U. S. Nat. Mus., X, 1887, p. 522.
 A male taken on the 'mountain' July 5, 1887.
 [Differs from the type of *A. sclateri* in having the belly unmarked with yellow or yellowish green and in the almost total absence of this color from the flanks.—F. M. C.]
92. *Cotinga cærulea* (Vieill.).—A male taken July 4, 1887. Said by the natives to be common in the fall, feeding on the fruit trees of the lowlands.
93. *Cotinga cayana* (Linn.).—One male taken.
94. *Querula cruenta* (Bodd.).—Two males and a female taken respectively on July 4 and 5, 1887, in a dense forest on the 'mountain' where

*Allen, Bull. Essex Inst., Vol. VIII, No. 8, 1876, p. 79.

they were found feeding with *Cassicus persicus* amongst the treetops; their note was a strange grunting sound.

[95. *Gymnoderus fœtidus* (Linn.)—A specimen taken by Smith, April 15, 1889.—F. M. C.]

96. *Furnarius pileatus* Scl. & Salv.—Common on mud banks near the river, where it was probably feeding on ants. It has a characteristic twitch of the tail resembling the movement of a Sandpiper.

[An adult male taken June 17, 1887, is the second recorded specimen of this species, the type of which was collected at Santarem.—F. M. C.]

[97. *Furnarius minor* Pelz.—One specimen collected by Smith in February, and a male and female collected by Williams in July. The female resembles the male in coloration, but exhibits what is apparently a trace of albinism in having two upper primary coverts of the right, and three of the left, wing, pure white.—F. M. C.]

[98. *Synallaxis guianensis* (Gm.).—A male taken by Williams, June, 1883.—F. M. C.]

99. *Synallaxis cinnamomea* (Gm.).—Common amongst wild rice about the marshes and river.

[100. *Synallaxis mustelina* Scl.—A male taken by Williams, May, 1883. Not before recorded from the Lower Amazon.—F. M. C.]

101. *Synallaxis rutilans* Temm.—Common; found running about fallen leaves in semi-palm forests.

102. *Berlepschia rikeri* Ridgw.

Picolaptes rikeri RIDGW., Proc. U. S. Nat. Mus., IX, 1886, p. 523.

Berlepschia rikeri RIDGW., ibid., X, 1887, p. 151.—SCL., Ibis, 1889, p. 351, pl. xi.

The single specimen collected of this species was found August 1, 1884, near the border of a palm forest, creeping about amongst the branches of a palm.

103. *Philydor erythrocercus* (Pelz.).—A female taken on the 'mountain' July 15, 1887, resembled a Thrush in its movements.

104. *Glyphorhynchus cuneatus* (Licht.).—Common about houses and clearings.

105. *Dendrocincla fuliginosa* (Vieill.).

Dendrocincla rufo-olivacea RIDGW., Proc. U. S. Nat. Mus., X, 1887, p. 493.—SCL., Ibis, 1889, p. 353.

Dendrocincla fuliginosa SCL., Cat. Bds. B. M., XV, 1890, p. 165.

A male and female taken on the 'mountain' June 15 and 16, 1887.

[With Mr. Ridgway I have been unable to compare these specimens with *D. fuliginosa* (Vieill.), and I therefore follow Mr. Sclater, who has examined the type of *D. rufo-olivacea*, in placing them under Vieillot's species.—F. M. C.]

106. *Dendrocincla castanoptera* Ridgw.

Dendrocincla castanoptera RIDGW., Proc. U. S. Nat. Mus., X, 1887, p. 494.

Dendrocincla merula SCL., Cat. Bds. B. M., XV, 1890, p. 168.

A male and female taken June 15, 1887, in a forest in the lowlands, feeding in advance of an army of ants.

107. *Dendrocolaptes certhia* (Bodd.).

Dendrocolaptes obsoletus RIDGW., Proc. U. S. Nat. Mus., X, 1887, p. 527, nec LICHT., Abh. Akad. Berl., 1819, p. 203.

Dendrocolaptes certhia SCL., Cat. Bds. B. M., XV, 1890, p. 173.

A male and female taken July 1, 1887, in the lowlands.

[Mr. Sclater, who has examined the type of *D. obsoletus* Ridgw., considers it inseparable from *D. certhia* Bodd. Of the last-named species I have no examples for comparison, and as in any case the name *obsoletus* is preoccupied, I follow Mr. Sclater in referring these specimens, for the present at least, to *D. certhia*.—F. M. C.]

108. *Nasica longirostris* (Vieill.).—Seen only about the river, where it was common.

109. *Dendroornis susurrans* (Jard.).

Dendroornis fraterculus RIDGW., Proc. U. S. Nat. Mus., X, 1887, p. 526,

Dendroornis susurrans ELLIOT, Auk, 1890, p. 171.

A male taken June 10, 1887, in a semi-palm forest twenty miles from the river.

[Mr. Elliot's examination of the type and single known specimen of *D. fraterculus*, resulted in his referring it to *D. susurrans* (Jard.) and with this decision it may be well to agree until further material shall more strongly urge the claims of *fraterculus* to recognition.—F. M. C.]

[110. *Dendroornis multiguttata* (Lafr.).—Three apparently adult females taken by Williams in June and July, 1883. Mr. Elliot in his recent review of the genus *Dendroornis* (Auk, 1890, p. 175) mentions these specimens one of which, taken July 30, he considers typical of *D. multiguttata*, while the remaining two are said to "probably merely represent a reddish phase of plumage, which I have noticed occurs sometimes with other species of the genus." This view may account for the marked differences in coloration which exist between the single July and the two June specimens, but it does not so well explain the differences shown by the following measurements (in inches):

		Wing	Tail	Tarsus	Bill from Nostril
July 30, 1883,	♀	3.85	3.25	.82	.74
June, "	♀	3.40	2.70	.75	.70
" "	♀	3.45	2.86	.74	.62

It is not improbable that the largest specimen may have been incorrectly sexed, when these differences of size and coloration might be considered sexual. At any rate the present material is not conclusive, and further specimens alone will decide whether these two small, reddish birds are specifically identical with *D. multiguttata*.—F. M. C.]

111. *Dendroornis eytoni* Scl.—A single specimen taken on the 'mountain' July 4, 1887.

112. *Dendroplex picus* (Gm.).—A female taken June 13, 1887.

113. *Picolaptes layardi* Scl.—A single specimen taken on the 'mountain', July 4, 1887.

114. *Cymbilanius lineatus* (Leach).—Three specimens taken in June, 1887.

[115. *Thamnophilus melanurus* Gould.—A female taken by Smith January 26, 1889.—F. M. C.]

116. *Thamnophilus simplex* Scl.—A male taken June 4, 1887.

[In general coloration this specimen agrees exactly with the description and plate of *T. simplex* (Ibis, 1873, p. 387, pl. 15), but the cap is distinctly blackish and not concolor with the plumbeous back as it is stated to be in *T. simplex*. The type of *simplex*, however, taken in January, may have been a bird of the year, having the black cap as yet undeveloped.—F. M. C.]

117. *Thamnophilus luctuosus* (Licht.).—A male and female taken near the border of streams.

[The female does not agree with Tschudi's description of the female of this species (Fauna Per., p. 172), but differs from the male only in being slightly smaller and in having the cap chestnut instead of black. Of three specimens collected by Smith one has the cap chestnut, in the others it is black. There is no indication of sex on the labels, but the chestnut-capped bird is the smallest of the three.—F. M. C.]

[118. *Thamnophilus nigrocinereus* Scl.—A male taken by Smith, January 23, 1889.—F. M. C.]

119. *Thamnophilus nævius* (Gm.).—A male taken June 13, 1887, in the lowlands.

120. *Thamnophilus ambiguus* Sw.—A female taken June 13, 1887, in the lowlands, climbing about vines, had a nervous, twitching movement of the tail.

121. *Thamnophilus inornatus* Ridgw.

Thamnophilus inornatus RIDGW., Proc. U. S. Nat. Mus., X, 1887, p. 522.

A male taken June 30, 1887, amongst the vines and underbrush of a dense forest on the 'mountain.'

[Agrees in size and general coloration with a specimen of *T. murinus* Pelz. from Merumé Mountains, British Guiana (Whitely). It may be distinguished from that species, however, by the absence of apical spots on the wing-coverts and tail; and the concealed white interscapular spot is also wanting.—F. M. C.]

122. *Thamnophilus radiatus nigricristatus* (Lawr.).—A male taken in the lowlands July 15, 1884.

[While not fully adult, this specimen is sufficiently mature for comparison with the types of *nigricristatus* with which, allowing for the difference in age, it agrees.—F. M. C.]

123. *Myrmotherula axillaris melanogastra* (Spix).—[Comparison of the four specimens in the Riker collection with *M. axillaris* from Bogota and *M. a. melanogastra* from Bahia, prove them to be much nearer the latter than the former. In the coloration of the dorsal surface they exactly agree with the Bahia bird, but in the color of the flanks and tipping of the tail-feathers are evidently intermediate between it and true *axillaris*. A male taken June 16, 1887, has the feathers of the entire

breast pure white for three fourths their basal length, the apical portion being of the normal black.—F. M. C.]

[124. *Myrmotherula cinereiventris* Scl.—A male taken by Williams June 25, 1883.—F. M. C.]

125. *Dichrozona zonota* Ridgw.

Dichrozona zonota RIDGW., Proc. U. S. Nat. Mus., X, 1887, p. 524. A male taken July 4, 1887.

[126. *Formicivora grisea* (Bodd.).—A male taken by Williams, June, 1883, and a female by Smith without date of capture.—F. M. C.]

[127. *Formicivora rufa* (Wied).

Thamnophilus rufater LAFR. & D'ORB., Syn. Av., p. 12 (Mag. de Zool., 1837).

Formicivora rufa ALLEN, Bull. A. M. N. H., II, 3, 1889, p. 253.

[A male taken by Williams is slightly darker above than Chapada, Matto Grosso, specimens, and the feathers of the head are centrally streaked with black. This record apparently extends the range of this species from Pernambuco to the Lower Amazon.—F. M. C.]

128. *Hypocnemis lugubris* (Cab.).—An adult male taken July 11, 1887, in the underbrush of the lowlands.

[A male taken by Williams, June 25, 1883, is not fully adult; the black feathers of the throat and sides of the neck have whitish tips and there are traces of brown throughout the plumage. In Mr. Riker's specimen the outer web of the primary coverts is margined with grayish white, and this color appears in faint terminal spots on the greater and lesser wing-coverts.—F. M. C.]

129. *Hypocnemis hypoleuca* (Ridgw.).

Heterocnemis hypoleuca sp. nov.? RIDGW., Proc. U. S. Nat. Mus., X, 1887, p. 523.

A female taken July 11, 1887, in company with the preceding.

[Mr. Sclater, to whom I have forwarded a second and typical female of this species taken by Williams, June 26, 1883, writes me that it is not the female of *Heterocnemis argentata* (Des Murs), which by Mr. Ridgway was considered possible (*l. c.*), but belongs to a species closely allied to *Hypocnemis lugubris*.—F. M. C.]

130. [*Rhototerpe torquata* (Bodd.).—"Deep woods near Santarem, May 19; common."*]

131. *Phlogopsis bowmani* Riker.

Phlogopsis bowmani RIKER MS., RIDGW., Proc. U. S. Nat. Mus., X, 1887, p. 524.

Two adult males taken July 15, 1887, in a dense forest on the 'mountain,' feeding upon the insects preceding the army ants.

132. *Rhegmatorhina gymnops* Ridgw.

Rhegmatorhina gymnops RIDGW., Proc. U. S. Nat. Mus., X, 1887, p. 525.

Gymnopithys gymnops SCL., Cat. Bds. B. M., XV, 1890, p. 297.

*Allen, Bull. Essex Inst., Vol. VIII, No. 8, 1876, p. 80.

A pair taken July 15, 1887, were found associated with *Phlogopsis bowmani*.

[The elongated and stiffened feathers of the crown and more rounded tail of this species appear to me to be sufficiently good characters on which to separate it generically from *Gymnopathys*.—F. M. C.]

133. *Eupetomena macroura* (Gm.).—A male and female taken on the campos, July 14, 1884.

134. *Thalurania glaucopsis* (Gm.).—Three females taken in June and July, 1887.

135. *Thalurania furcatoides* Gould.—A male taken August 2, 1884.

136. *Eucephala cærulea* (Vieill.).—Common during June and July of 1884 and 1887.

[137. *Antrostomus* *sp. incog.*—A female collected by Smith, January 23, 1889, measures: wing 5.00; tail, 3.70 in. The crown is almost entirely black, the spots on the quills, the tail-bars, and the abdomen are buffy.—F. M. C.]

138. *Nyctidromus albicollis* (Gm.).—Common.

[139. *Picumnus cirratus* Temm.—A female in faded and worn plumage collected by Williams, September 3, 1883, is provisionally referred to this species. The abraded condition of the plumage renders its characters too obscure to permit positive identification.—F. M. C.]

[140. *Ceophlæus tracheolopyrrhus* (Malh.).—An adult male taken by Smith, January 24, 1889.—F. M. C.]

141. *Ceophlæus lineatus* (Linn.).—Common.

142. *Ceophlæus melanoleucus* (Gm.).—Two females taken during June and July, 1887.

143. *Chloronerpes affinis selysi* (Malh.).—Two males and a female taken during June and July.

[They differ from Bahia specimens (*affinis*) only in the restriction of the yellow nuchal band.—F. M. C.]

[144. *Chloronerpes flavigularis* (Bodd.).—A female collected by Smith March 15, 1889, agrees with Malherbe's plate of *Chloropicus chlorocephalus*, but is quite different from Guianan specimens of *flavigularis* in the Lawrence Collection, which have the white markings of the throat guttate, or scutiform, while in the Santarem specimen they are broadly triangular.—F. M. C.]

145. *Chrysoptilus guttatus* (Spix).

Picus guttatus SPix, Av. Bras., I, 1824, p. 61, pl. viii.

An adult female and an immature male, taken respectively July 13 and June 23, 1887, in the flooded districts on the banks of the river.

[These specimens differ from a Venezuelan example, identified as *C. punctigula* by Mr. Sclater, in being slightly smaller, paler, and less heavily spotted below, and especially in the pattern of coloration of the black and white markings of the throat. In the Venezuelan bird the feathers of this region are white with a central black streak which is broadest basally and after a slight sub-terminal constriction widens at the tip. In the Santa

rem birds these feathers are black with two white apical spots. From the southern form of *C. punctigula*, *C. p. punctipectus* (Cab. & Hein.*) it may be distinguished by its darker coloration and by the same characters in the pattern of the throat feathers which separate it from *C. punctigula*. *Chrysophilus speciosus* Scl. (= *C. punctipectus* Tacz., Orn. Peru, III, p. 88, nec Cab. & Heine.) I have not seen; it is evidently closely related to, but larger than, the Lower Amazonian form. The *Picus guttatus* of Spix, described from the Amazon, has by authors been synonymized with the earlier *Picus punctigula* (Bodd.). While Spix's description is not sufficiently detailed to render certain the form he had in hand, the locality he gives, "*in sylvis fl. Amazonum*," makes it extremely probable his specimens were similar to the Santarem bird.

Measurements (in inches) of four forms are appended.

		Wing	Tail	Exposed Culmen
<i>C. punctigula</i> , Venezuela,	♀ ad.	4.42	2.78	.86
<i>C. p. punctipectus</i> , Rio,	♀ ad.	4.48	3.08	.62
<i>C. guttatus</i> , Santarem,	♀ ad.	4.28	2.70	.91
" " "	♂ im.	3.97	2.50	.75
<i>C. speciosus</i> , Upper Amazon,	♂ ad.	4.71	3.26	1.02†

146. *Melanerpes cruentatus* (Bodd.). — Common about plantations in the lowlands, puncturing holes in oranges.

147. *Celeus ochraceus* (Spix). — A female taken June, 1887, near the river.

148. *Celeus citrinus* (Bodd.). — A male taken June 16, and a female, July 5, 1887. Feet and feathers covered with a sticky substance in which were matted quantities of ants. The only reason for this I can advance is that they enter the nests of wild bees in quest of young bees or honey.

[The male is quite different from Guianan specimens and has only the inner half of the inner web of the secondaries brown; the female, however, has the whole inner web and inner half of the outer web brown, while the outer and median secondaries are wholly brown. If separable as a form from the Guianan bird the synonymy might stand as follows: *Picus flavicans* SPIX, Av. Bras., I, p. 60, pl. li, fig. 2, nec *Picus flavicans* LATH., Ind. Orn., I, p. 240 = *Picus citrinus* BODD., Tabl. Enl. p. 30, No. 509.

(To be concluded.)

* Mus. Hein., IV, 1863, p. 163.

† Tacz., Orn. Peru, III, p. 88.

SOME BIRD SONGS.

BY SIMEON PEASE CHENEY.

CATBIRD.

With something of the style of the Brown Thrush, the Catbird is not his equal in song. He is generally considered a mocking-bird, and does make use of the notes of different birds, delivering them in snatchy, disconnected fashion. It is easy to trace in the Catbird's singing the notes of the Red-eyed Vireo, the Brown Thrasher, Bluebird, Robin, and Yellow-breasted Chat. His performance on the whole is very interesting, given, as it is, in a lively manner, with an occasional tone truly sweet and musical. Much of his singing, however, is mere twitter, often little more than a succession of squeaks, too antic to be put on paper.



BROWN THRUSH; BROWN THRASHER.

Despite a lack of quality in tone, the Thrasher is one of the favorites; his fame is assured. In exuberance and peculiarity

of performance he is unsurpassed, unless it be by the Catbird. While prone to the conversational style, he is capable of splendid inspiration. On a fine morning in June, when he rises to the branch of a wayside tree, or to the top of a bush at the edge of the pasture, the first eccentric accent compels us to admit that the spirit of song has fast hold on him. As the fervor increases, his long and elegant tail droops, his whole plumage is loosened and trembling, his head is raised, and his bill is wide open; there is no mistake, it is the power of the god. No pen can report him now; we must wait till the frenzy passes. Then we may catch such fragments as these:



WHIPPOORWILL.

No bird in New England is more readily known by his song

Crescendo ed accelerando.....

See

Sea

Whip - poor-will, whip - poor-will 1st voice, 2nd voice, 1st.

2nd. 1st. 2nd. 1st. 2nd. 1st. 2nd.

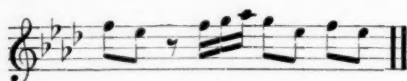
Detailed description: This is a musical score for the song 'Whip-poor-will'. It consists of two staves. The top staff is for the vocal part, starting with a treble clef and a key signature of one sharp (F#). The melody is written in a simple, folk-like style. The bottom staff is for the piano accompaniment, also in treble clef and one sharp. It features a rhythmic pattern of eighth and sixteenth notes. The lyrics 'Whip - poor-will, whip - poor-will' are written below the first staff. The first staff is divided into three measures, with the first two measures labeled 'Whip - poor-will' and the third measure labeled '1st voice, 2nd voice, 1st.'. The second staff is divided into seven measures, with the first two measures labeled '2nd.' and '1st.', and the remaining five measures labeled '2nd.', '1st.', '2nd.', '1st.', and '2nd.' respectively.

Various melodic forms :

Whip - poor-will (cluck) Whip - poor-will (cluck) Whip - poor-will (cluck)

SCARLET TANAGER.

This Tanager, the Baltimore Oriole's rival in beauty, is the less active, the less vigorous charmer of the two, and has less vocal power; but it would be difficult to imagine a more pleasing and delicate exhibition of a bird to both eye and ear than that presented by this singer in scarlet and black, as he stands on the limb of some tall tree in the early sun, shining, and singing, high above the earth, his brief, plaintive, morning song. The Tanager's is an unobtrusive song, while the percussive, ringing tones of the Oriole compel attention. In the spring of 1888 a beautiful singer greeted me one summer morning from the top of a tall oak near the house. He paid frequent visits to the same tree-top during the entire season, and sang the same song, beginning and ending with the same tones:



Still, like other birds, he had his variations:



These were all June songs, the last two being sung late in the afternoon.

Though the singer's home was in the near woods, we did not discover the nest of his mate. There came a time of silence, and an absence of flaming plumage, and finally a family of Tanagers—undoubtedly ours—male and female and three unfinished young

Tanagers of a neutral, olive tint, were about our grounds in the last days of August, evidently preparing to leave for their home in the tropics. The husband and father had doffed both his 'singing-robe' and his garment of scarlet, and wore in silence a traveling-dress of mixed pea-green and willow-yellow. More desirous than ever to avoid notice, there was about him a most captivating air of quietness and modesty.

ON THE WEST INDIAN SPECIES OF THE GENUS
CERTHIOLA OR *CÆREBA*.*

BY CHARLES B. CORY.

GENUS *Cæreba* VIEILLOT.

Cæreba VIEILLOT, Ois. Am. Sept. I, 1807, p. 70. Type, *C. flaveola* Linn.

A. Throat ash color or ashy white; large, white wing-spot on quills extending beyond primary coverts.

Cæreba bahamensis (Reich.).

Certhia bahamensis BRISS. Orn. III, p. 620 (1760).

Certhiola bahamensis REICH. Handb. I, p. 253 (1853).—CORY, Birds Bahama Islands, p. 76 (1880); *id.* Birds West Indies, p. 61 (1889).

Certhiola bairdii CAB. J. f. O. 1865, p. 412.

Cæreba bahamensis RIDGW. Man. N. A. Birds, p. 590 (1887).

Throat ashy white; ash white on abdomen.

HABITAT.—Bahama Islands (61).†

Cæreba sharpei (Cory).

Certhiola sharpei CORY, Auk, III, pp. 497, 501 (1886).—RIDGW. Proc. U. S. Nat. Mus. p. 574 (1887).

Throat more ashy than in *bahamensis*; belly pale yellow or yellowish white.

HABITAT.—Grand Cayman (36), Little Cayman (19), and Cayman Brac (13).

*According to Mr. Ridgway (Manual of N. Am. Birds, p. 590 (1887), *Cæreba* must be used for this genus.

†The numbers of specimens examined are given after the names of the islands on which the species occur.

B. Throat ash gray; white spot showing beyond primary coverts.

Cæreba portoricensis (Bryant).

Certhiola flaveola var. *portoricensis* BRYANT, Pr. Boston Soc. Nat. Hist. X, p. 252 (1886).

Certhiola portoricensis SUND, Consp. 1869, p. 622.—SCLATER, Cat. Bds. Brit. Mus. XI, p. 41 (1886).—CORY, Bds. West Indies, p. 62 (1889).

Certhiola sancti-thomæ RIDGW. Proc. U. S. Nat. Mus. VIII, pp. 28-29 (1885).

Under parts and rump yellowish olive. Some specimens from Anegada have the throat slightly darker than those from St. Thomas or Porto Rico.

HABITAT.—Porto Rico (16), Culebra (1), Anegada (26), Tortola (6), Virgin Gorda (28), St. Thomas (10), St. John (4).

Cæreba luteola (Cab.).

Certhiola luteola CAB. Mus. Hein. I, p. 96.—SCLATER, Cat. Am. Bds. p. 53 (1862).—TAYLOR, Ibis, 1864, p. 179.—SCLATER, Cat. Bds. Brit. Mus. XI, p. 40 (1886).

Certhiola flaveola LÉOTAUD, Ois. Trinidad, p. 126.

Certhiola godmani CORY, Auk, VI, p. 219 (1889).

Under parts and rump bright orange yellow; throat slightly darker than in *portoricensis*; back dark.

HABITAT.—Grenada (9), Trinidad (2), Tobago (1), Venezuela (6), and north coast of Colombia.

C. Throat dark slaty gray; white spot at base of primaries.

*c*¹. Rump bright yellow.

Cæreba bananivora (Gmel.).

Motacilla bananivora GMEL. Syst. Nat. I, p. 951 (1788).

Certhiola bananivora BRYANT, Proc. Boston Soc. Nat. Hist. XI, p. 95 (1865).—CORY, Bds. Hayti and San Domingo, p. 41 (1885); *id.* Bds. West Indies, p. 63 (1889).—SCLATER, Cat. Bds. Brit. Mus. XI, p. 40 (1886).

Certhiola chisiæ HARTL. Naumannia, II, pt. 2, p. 56 (1852).—SCL. & SALV. Nomen. Avium Neotr. p. 17 (1873).

HABITAT.—Hayti and San Domingo (65).

Cæreba flaveola (Linn.).

Certhia flaveola LINN. Syst. Nat. I, p. 187 (1766).

Certhiola flaveola GOSSE, Bds. Jamaica, p. 84 (1847).—CORY, Bds. West Indies, p. 65 (1889).—SCLATER, Cat. Bds. Brit. Mus. XI, p. 43 (1876).

Throat darker than in *bananivora*.

HABITAT.—Jamaica (13).

c². Rump yellowish olive.

Cœreba newtoni (Baird).

Certhiola flaveola A. and E. Newton, Ibis, 1859, p. 67.

Certhiola newtoni BAIRD, American Nat. VII, p. 611 (1873).—RIDGW.

Proc. U. S. Nat. Mus. VIII, pp. 28-30 (1885).—SCLATER, Cat. Bds.

Brit. Mus. XI, p. 43 (1876).—CORY, Bds. West Indies, p. 65 (1889).

Superciliary stripe very heavy and extending to the bill; white marking in quills truncate.

HABITAT.—St. Croix (33).

Cœreba saccharina (Lawr.).

Certhiola saccharina LAW. Ann. N. Y. Acad. Sci. I, p. 151 (1878).—

RIDGW. Proc. U. S. Nat. Mus. VIII, pp. 28-30 (1885).—SCLATER,

Cat. Bds. Brit. Mus. XI, p. 42 (1886).—CORY, Bds. West Indies, p. 64 (1889).

Throat darker than in *C. newtoni*.

HABITAT.—St. Vincent (7).

D. Throat dark slaty gray; comparatively little or no white showing on quills; rump dull yellowish olive.

Cœreba dominicana (Taylor).

Certhiola dominicana TAYLOR, Ibis, 1864, p. 167.—SCLATER, Cat. Bds.

Brit. Mus. XI, p. 44 (1886).—CORY, Bds. West Indies, p. 65 (1889).

Certhiola sundevalli RIDGW. Proc. U. S. Nat. Mus. 1885, p. 26.

HABITAT.—Dominica (14), Marie Galante (13), Desirade (4), Barbuda (3), Nevis (2), St. Kitts (15), St. Eustatius (14), Saba (3).

Cœreba bartolemica (Sparrm.).

Certhia bartolemica SPARRM. Mus. Carls. fasc. III, No. 57 (1788).

Certhiola bartolemica REICH. Hand. Scans. p. 253 (1853).—RIDGW. Proc.

U. S. Nat. Mus. VIII, p. 28 (1885).—SCLATER, Cat. Bds. Brit. Mus.

XI, p. 42 (1886).—CORY, Bds. West Indies, p. 64 (1889).

Allied to *dominicana*, but showing some white on the quills. The superciliary stripe in the specimens examined from St. Bartholemew begins above the eye; but one of the Anguilla specimens, which I have referred to this species, has the superciliary stripe nearly reaching the bill. It is now known that the extent of the grayish white feathers on the forehead and the length and color of the superciliary stripe vary much in several species with age and season, and are of comparatively little value as distinguishing characters. Unfortunately lack of sufficient material from St. Bartholemew renders it unwise to attempt to decide as to the specific value of *dominicana*; but in case the two forms should prove to be inseparable, *bartolemica*, being the older name, would of course stand, and *dominicana* become a synonym.

HABITAT.—St. Bartholemew (3), Anguilla (2)?

E. Throat bicolored.

Cœreba martinicana Reich.).

Certhia martinicana s. saccharivora BRISS. Orn. III, p. 611 (1760).

Certhiola martinicana REICH. Handb. I, p. 252 (1853).—RIDGW. Proc.

U. S. Nat. Mus. VIII, pp. 28-30 (1885).—SCLATER, Cat. Bds. Brit.

Mus. XI, p. 46 (1886).—CORY, Bds. West Indies, p. 66 (1889).

Certhiola albigula BP. Compt. Rend. 1854, p. 259.—TAYLOR, Ibis, 1864, p. 167.

Certhiola finschi RIDGW. Proc. U. S. Nat. Mus. VIII, p. 25 (1885).

Throat black with median white stripe nearly reaching the bill; immature birds have the superciliary stripe yellow, a phase of plumage which occurs in several other species.

HABITAT.—Martinique (30), St. Lucia (6).

Cœreba barbadensis (Baird).

Certhiola barbadensis BAIRD, Am. Nat. VII, p. 612 (1873).—RIDGW.

Proc. U. S. Nat. Mus. VIII, pp. 28-30 (1885).—SCLATER, Cat. Bds.

Brit. Mus. XI, p. 46 (1886).—CORY, Bds. West Indies, p. 66 (1889).

Throat black with a patch of white on the lower half joining the yellow of the breast.

HABITAT.—Barbados (29).

F. Plumage entirely black, often showing a faint greenish gloss.

Cœreba wellsii (Cory).

Certhiola wellsii CORY, Auk, VI, p. 219 (1889).

HABITAT.—Grenada (9).

Cœreba atrata (Lawr.).

Certhiola atrata LAWR. Ann. N. Y. Acad. Sciences, I, p. 150 (1878).—

RIDGW. Proc. U. S. Nat. Mus. VIII, pp. 28-30 (1885).—SCLATER,

Cat. Bds. Brit. Mus. XI, p. 47 (1886).—CORY, Bds. West Indies, p. 67 (1889).

HABITAT.—St. Vincent (7).

The species of the genus not included in the foregoing list are as follows:—

C. tricolor (Ridgw.).—Old Providence (11), St. Andrews (14).

C. tricolor RIDGW. Proc. U. S. Nat. Mus. 1884, p. 178.

Throat slightly more ashy than *sharppei*, and breast, rump, and under parts more orange yellow.

C. caboti (Baird).—Cozumel Is. (4).

Certhiola caboti BAIRD, Am. Nat. VII. p. 612 (1873).

Throat dull white, lighter than in *bahamensis*; belly yellow; olive on the flanks and vent.

C. mexicana (Sclater).—Mexico (3), Guatemala (5), Panama (2).

Certhiola mexicana SCLATER, P. Z. S. 1856, p. 286.

Throat ash gray; white spot at base of primaries variable in size; rump yellowish olive.

C. mexicana columbiana (Cab.).—Panama (2) to Peru.

Certhiola columbiana CAB. J. f. O. 1865, p. 412.

Rump brighter yellow than in *mexicana*. A race of doubtful value.

C. mexicana peruviana (Cab.).—Peru (5), Bolivia (1).

Certhiola peruviana CAB. J. f. O. 1865, p. 413.

Wing spot very small. Intermediate between *mexicana* and *chloropyga*.

C. mexicana magnirostris (Tacz.).—Peru (2).

Certhiola magnirostris TACZ. P. Z. S. 1876, p. 225.

Bill large; apparently no other distinguishing characters.

C. chloropyga (Cab.).—Brazil (5), north to Guiana, Cayenne (2).

Certhiola chloropyga CAB. Mus. Hein. I, p. 97 (1851).

Certhiola guianensis CAB. Mus. Hein. I, p. 97 (1851).

Certhiola majuscula CAB. J. f. O. 1865, p. 413.

Throat ashy gray; lower rump olive yellow; back slaty brown; wing spot concealed.

Of the 615 specimens examined while preparing the present paper 583 are contained in my own collection. The balance were loaned me for examination by the American Museum of Natural History, New York, through the kindness of Dr. J. A. Allen, and the Smithsonian Institution, Washington, by Mr. Robert Ridgway, to both of whom I wish to express my thanks.

NOTES ON WEST INDIAN BIRDS.

BY CHARLES B. CORY.

THE COLLECTIONS lately forwarded to me from the West Indies contain a large series of so-called *Margarops montanus*, which, taken together with those already in my cabinet, form a series of 121 specimens from the various islands where it occurs. A care-

ful examination and comparison of the material now before me shows that the variation in color of specimens from different islands is not at all constant, and I am forced to the conclusion that the supposed races *albiveniris* and *rufus* as described by Mr. Lawrence and myself, are untenable.

It is evident that the species in question should be separated generically from *Cichlherminia*, as *Margarops* cannot be used, the type being given as *fuscatus*. I therefore propose the name of *Allenia*, in compliment to Dr. J. A. Allen of New York, for the new genus.

***Allenia montana* (LAFR.).**

Turdus montanus LAFR. Rev. Zool. 1844, p. 107.

Margarops montanus SCLATER, P. Z. S. 1859, p. 336; *ibid.* 1871, p. 268.—GRAY, Handl. Bds. I, p. 259 (1869).—CORY, Birds of the West Indies, p. 29 (1889).

Cichlherminia montana SHARPE, Cat. Birds Brit. Mus. VI, p. 330, (1881).

Margarops albiventris LAWRENCE, Ann. New York Acad. Sci., IV, p. 23 (1887).

Margarops montanus rufus CORY, Auk, V, p. 47 (1888).

HABITAT.—Grenada, St. Vincent, Martinique, St. Lucia, Dominica, Guadeloupe, Marie Galante, Desirade, St. Kitts, Antigua, St. Eustatius.

I have been fortunate in being able to procure a very large series of *Cichlherminia fuscata* and *C. densirostris* from the Antilles, numbering in all over two hundred specimens, and a careful examination of this material gives the following results.

1. That there is a gradual change in color from a light brown form in the extreme north (Inagua, Bahamas) to a dark brown form with slightly different markings in the extreme south (St. Lucia).

2. That the change in color is so gradual that specimens from approximate islands cannot be separated.

3. That there is no positive line of demarcation, and that the two forms should be separated subspecifically if at all.

It is claimed that birds from the Lesser Antilles have the iris yellow, while in those from Porto Rico, Inagua and some of the northern islands it is white. According to the notes given by my collectors this does not seem to be a constant character, as the

color of the eye in specimens from Martinique and Dominica is given as yellowish white, whitish yellow, and pale yellow, while some birds from Inagua and Porto Rico are noted as having the eye dull white and "iris yellowish white."

By restricting *C. fuscata* to the Bahamas, Porto Rico, San Domingo, St. Croix, and the Virgin Islands, we should arrange the genus as follows:

***Cichlherminia fuscata* (VIEILL.).**

Turdus fuscatus VIEILL. Ois. Am. Sept. II, p. 1 (1807).—BP. Consp. I, p. 276 (1850).

Colluricincla fusca GOULD, P. Z. S. 1836, p. 6.

Margarops fuscatus SCLATER, P. Z. S. 1859, p. 335.—CORY, Bds. Bahama Islands, p. 47 (1880); *id.* Bds. Hayti and San Domingo, p. 22 (1885); *id.* Birds of the West Indies, p. 28 (1889).

Cichlherminia fuscata, A. and E. NEWTON, *Ibis*, 1859, p. 141.—SHARPE, Cat. Bds. Brit. Mus. VI, p. 329 (1881).

HABITAT.—Inagua, Bahamas, San Domingo, Porto Rico, St. Croix, and the Virgin Islands (Virgin Gorda, St. Thomas, and Tortola).

***Cichlherminia fuscata densirostris* (VIEILL.).**

Turdus densirostris VIEILL. Nouv. Dict. XX, p. 233 (1816).—LAFR. Rev. Zool. 1844, p. 167.

Cichlherminia densirostris BP. Compt. Rend. XXXVIII, p. 2 (1854).—SHARPE, Cat. Bds. Brit. Mus. VI, p. 330 (1881).

Margarops densirostris SCLATER, P. Z. S. 1859, p. 336.—ALLEN, Bull. Nutt. Orn. Club, V, p. 166 (1880).—CORY, Birds West Indies, p. 29 (1889).

HABITAT.—St. Eustatius, St. Kitts, Anguilla, Antigua, Montserrat, Dominica, Martinique, Guadeloupe, St. Lucia, and Barbados.

***Cichlherminia herminieri* (LAFR.).**

Turdus herminieri LAFR. Rev. Zool. 1844, p. 167.

Cichlherminia herminieri BP. Comp. Rend. XXXVIII, p. 2 (1854).—SHARPE, Cat. Bds. Brit. Mus. VI, p. 327 (1881).—CORY, Birds West Indies, p. 21 (1889).

Cichlherminia bonapartii SCL. P. Z. S. 1859, p. 335.

Margarops herminieri SCL. & SALV. Nomen. Avium Neotropical. p. 2 (1873).—LAWR. Pr. U. S. Nat. Mus. I, p. 52 (1878)—SCLATER, P. Z. S. 1880, p. 72.

HABITAT.—Guadeloupe.

Cichlherminia lawrencii sp. nov.

SP. CHAR. (Type No. 15056, ♂, Coll. C. B. Cory, Boston). Upper parts, wings, and tail dark rufous brown; throat reddish brown, the middle of the feathers marked unevenly with brownish white, edged with reddish brown. The feathers of the under parts are white, edged with brown, showing large, white, arrow-shaped markings on the lower breast and belly; feathers of the under wing-coverts white, edged with brown; under surface of inner primaries showing pale rufous brown on the inner webs. Length 9.50; wing 5.50; tail 3.75; tarsus 1.50; bill .95 inch.

The Montserrat bird is intermediate in color between *dominicensis* and *herminieri*. The feathers on the throat are edged with rufous brown, not pale brown as in *herminieri*. The back is reddish brown, not pale olive as in *herminieri*, or dark brown as in *dominicensis*. The white, arrow-shaped markings on the underparts are larger and more regular.

HABITAT.—Montserrat, West Indies.

Cichlherminia sanctæ-luciæ (SCLATER).

Margarops herminieri SCL. P. Z. S. 1881, p. 268.

Margarops sanctæ-Luciæ SCL. Ibis, 1880, p. 73.—ALLEN, Bull. Nutt. Orn. Club, V, p. 165 (1880).

Margarops herminieri var. *semperi* LAW. MS. Bull. Nutt. Orn. Club, V, p. 165 (1880).

Cichlherminia sanctæ-luciæ SHARPE, Cat. Bds. Brit. Mus. VI, p. 238 (1881).—CORY, Birds West Indies, p. 22 (1889).

HABITAT.—St. Lucia. St. Vincent?

Cichlherminia dominicensis (LAWR.).

Margarops herminieri LAW. Proc. U. S. Nat. Mus. I, p. 52 (1878).

Margarops dominicensis LAW. Proc. U. S. Nat. Mus. III, p. 16 (1880).

Cichlherminia dominicensis SHARPE, Cat. Bds. Brit. Mus. VI, p. 328 (1881).—CORY, Bds. West Indies, p. 22 (1889).

HABITAT.—Dominica. Martinique?

In a large series of *Mimus orpheus* now before me from the Bahamas and Greater Antilles the specimens from the different islands fail to show any differences sufficiently constant to warrant separating them specifically. Some birds vary decidedly in size and coloration, but as much variation is noticeable in specimens from the same locality as in those from different islands.

The tail marking varies in different specimens, and some examples show the two external tail-feathers differently marked in the same bird. At first glance the Inagua bird would appear to represent a fairly good race, as the average specimens are slightly smaller, and a majority of them have the white patch on the primaries completely covered, when the wing is closed, by the white primary coverts (the primary coverts are sometimes white and sometimes tipped and blotched with brown, according to age and season), but taken in large series it is found that at least one fourth of the specimens show the white on the closed wing extending beyond the primary coverts, and we find birds from Porto Rico, San Domingo, the Caymans, and Cuba, which vary in the same manner having the white on the quills both covered and exposed.

The difference between *M. orpheus* and *M. polyglottos* are not always well marked. In many cases they are very close indeed, in fact I do not know a single character which is absolutely constant whereby they may be distinguished. Some Florida and Texas birds are darker and somewhat larger than any West Indian specimens I have seen, but birds occur on Andros Island, Abaco, and others of the northern Bahama Islands which it is difficult to refer to one or the other. We have therefore no alternative but to consider *orpheus* as a subspecies of *polyglottos*.

Mimus polyglottos orpheus (LINN.).

Turdus orpheus LINN. Syst. Nat. I, p. 169 (1758); *ib.* p. 293 (1766).

Mimus polyglottus GOSSE, Bds. Jamaica, p. 144 (1847).

Mimus orpheus GRAY, Gen. Bds. I, p. 221 (1844). — CORY, Bds. West Indies, p. 33 (1889).

Mimus polyglottus var. *cubanensis* BRYANT, Proc. Boston Soc. Nat. Hist. p. 68 (1866).

Mimus elegans SHARPE, Cat. Bds. Brit. Mus. VI, p. 339 (1881).

Turdus dominicus LINN. Syst. Nat. I, p. 295 (1766).

Mimus dominicus CORY, Bds. Hayti and San Domingo, p. 21 (1885); *id.* Bds. West Indies, p. 34 (1889).

Mimus orpheus var. *dominicus* CORY, Bds. Bahama Islands, p. 48 (1880).

HABITAT. — Jamaica, Cuba, Grand Cayman, San Domingo, Andros, Abaco, and Inagua, Bahamas.

The Porto Rico bird is perhaps worthy of subspecific separation, as a majority of the specimens are larger and darker than

those from neighboring islands. The wings and tail are very dark, almost black, but my cabinet also contains specimens from Porto Rico which are difficult to distinguish from birds taken in Cuba and San Domingo.

Mimus polyglottos portoricensis BRYANT.

Mimus polyglottus var. *portoricensis* BRYANT. PROC. BOSTON SOC. NAT. Hist. XI, p. 68 (1866).

Mimus polyglottus GUNDLACH, ANALES DE LA SOC. ESP. DE HIST. NAT. VII, p. 173 (1878).

HABITAT.—Porto Rico.

A COLLECTION OF BIRDS TAKEN BY CYRUS S. WINCH IN THE ISLANDS OF ANGUILLA, ANTIGUA, AND ST. EUSTATIUS, WEST INDIES, DURING APRIL, MAY, JUNE, AND A PART OF JULY, 1890.

BY CHARLES B. CORY.

•
ANGUILLA.

Podilymbus podiceps (<i>Linn.</i>).	Elænea martinicana (<i>Linn.</i>).
Gallinula galeata (<i>Licht.</i>).	Euetheia bicolor (<i>Linn.</i>).
Fulica caribæa (<i>Ridgw.</i>).	Loxigilla noctis (<i>Linn.</i>).
Himantopus mexicanus <i>Müll.</i>	Cæreba bartholemica? (<i>Sparrm.</i>).
Falco caribbæarum <i>Gmel.</i>	Cichlherminia fuscata densirostris (<i>Vieill.</i>).
Ceryle alcyon (<i>Linn.</i>).	
Tyrannus dominicensis (<i>Gmel.</i>).	Galeoscoptes carolinensis (<i>Linn.</i>).

ANTIGUA.

Larus atricilla (<i>Linn.</i>).	Pelecanus fuscus <i>Linn.</i>
Sterna sandvicensis aculeifida <i>Cabot.</i>	Gallinula galeata (<i>Licht.</i>).
Sterna dougalli <i>Mont.*</i>	Fulica caribæa <i>Ridgw.</i>
Sterna antillarum (<i>Less.</i>).	Himantopus <i>Müll.</i>

* Specimens of this species taken in June have the basal half of the bill red, and in three specimens the red color extends more than half the length of the bill. In all these birds the black cap is complete. In specimens taken in September, which have the black cap imperfect or mixed with white and gray, the bill is entirely black.

<i>Symphemia semipalmata</i> (Gmel.).	<i>Bellona exilis</i> (Gmel.).
<i>Totanus melanoleucus</i> (Gmel.).	<i>Eulampis holosericeus</i> (Linn.).
<i>Colinus virginianus</i> (Linn.).	<i>Tyrannus dominicensis</i> (Gmel.).
<i>Columba leucocephala</i> Linn.	<i>Elænea martinica</i> (Linn.).
<i>Zenaida zenaida</i> (Bonap.).	<i>Euetheia bicolor</i> (Linn.).
<i>Geotrygon mystacea</i> (Temm.).	<i>Loxigilla noctis</i> (Linn.).
<i>Columbigallina passerina</i> (Linn.).	<i>Piranga erythromelas</i> Vieill.
<i>Buteo latissimus</i> (Wils.).*	<i>Vireo calidris</i> (Linn.).
<i>Falco caribbæarum</i> (Gmel.).	<i>Cæreba dominicana</i> (Taylor).
<i>Speotyto amaura</i> Lawr.	<i>Dendroica ruficapilla</i> (Gmel.).
<i>Coccyzus minor</i> (Gmel.).	<i>Allenia montana</i> (Lafr.).
<i>Coccyzus americanus</i> (Linn.).	<i>Cichlherminia fuscata densirostris</i> (Vieill.).

ST. EUSTATIUS.

<i>Phaëthon flavirostris</i> Brandt.	<i>Vireo calidris</i> (Linn.).
<i>Ardea cærulea</i> Linn.	<i>Progne dominicensis</i> (Gmel.).
<i>Columba corensis</i> Gmel.	<i>Cæreba dominicana</i> (Taylor).
<i>Zenaida zenaida</i> (Bonap.).	<i>Mniotilta varia</i> (Linn.).
<i>Falco caribbæarum</i> Gmel.	<i>Dendroica ruficapilla</i> (Gmel.).
<i>Bellona exilis</i> (Gmel.).	<i>Compsothlypis americana</i> (Linn.).
<i>Eulampis holosericeus</i> (Linn.).	<i>Dendroica discolor</i> (Vieill.).
<i>Tyrannus dominicensis</i> (Gmel.).	<i>Setophaga ruticilla</i> (Linn.).
<i>Euetheia bicolor</i> (Linn.).	<i>Allenia montana</i> (Lafr.).
<i>Loxigilla noctis</i> (Linn.).	<i>Cichlherminia fuscata densirostris</i> (Vieill.).

A LIST OF THE BIRDS COLLECTED IN THE
ISLANDS OF ST. CROIX AND ST. KITTS, WEST
INDIES, DURING MARCH AND APRIL, AND
IN GUADELOUPE DURING AUGUST,
SEPTEMBER, AND OCTOBER, 1890.

BY CHARLES B. CORY.

ST. CROIX.

<i>Gallinula galeata</i> (Licht.).	<i>Ctanus flavipes</i> (Gmel.).
<i>Ardea virescens</i> Linn.	<i>Columba leucocephala</i> Linn.
<i>Nycticorax violaceus</i> (Linn.).	<i>Columba corensis</i> Gmel.

* A rather small pale form, resident in Antigua, and quite abundant.

<i>Zenaida martinicana</i> Bonap.	<i>Cœreba newtoni</i> (Baird).
<i>Geotrygon mystacea</i> (Temm.).	<i>Seiurus noveboracensis</i> (Gmel.).
<i>Columbigallina passerina</i> (Linn.).	<i>Mniotilta varia</i> (Linn.).
<i>Falco caribbæarum</i> Gmel.	<i>Compsothlypis americana</i> (Linn.).
<i>Crotophaga ani</i> (Linn.).	<i>Dendroica discolor</i> (Vieill.).
<i>Bellona exilis</i> (Gmel.).	<i>Dendroica tigrina</i> (Gmel.).
<i>Eulampis holosericeus</i> (Linn.).	<i>Dendroica ruficapilla</i> (Gmel.).
<i>Tyrannus dominicensis</i> (Gmel.).	<i>Setophaga ruticilla</i> (Linn.).
<i>Euethia bicolor</i> (Linn.).	<i>Cichlherminia fuscata</i> (Vieill.).

ST. KITTS OR ST. CHRISTOPHER.

<i>Ardea virescens</i> Linn.	<i>Myiarchus berlepschii</i> Cory.
<i>Nycticorax violaceus</i> (Linn.).	<i>Euethia bicolor</i> (Linn.).
<i>Totanus flavipeus</i> (Gmel.).	<i>Loxigilla noctis</i> (Linn.).
<i>Columbigallina passerina</i> (Linn.).	<i>Vireo calidris</i> (Linn.).
<i>Buteo borealis</i> (Gmel.).	<i>Progne dominicensis</i> (Gmel.).
<i>Falco columbarius</i> Linn.	<i>Cœreba dominicana</i> (Taylor).
<i>Falco caribbæarum</i> Gmel.	<i>Compsothlypis americana</i> (Linn.).
<i>Ceryle alcyon</i> (Linn.).	<i>Dendroica discolor</i> (Vieill.).
<i>Bellona exilis</i> (Gmel.).	<i>Dendroica ruficapilla</i> (Gmel.).
<i>Eulampis holosericeus</i> (Linn.).	<i>Setophaga ruticilla</i> (Linn.).
<i>Eulampis jugularis</i> (Linn.).	<i>Allenia montana</i> (Lafr.).
<i>Elænea martinica</i> (Linn.).	<i>Cinlocerthia ruficauda</i> (Gould).

GUADELOUPE.

<i>Larus atricilla</i> Linn.	<i>Zenaida martinicana</i> Bonap.
<i>Sterna anæthetus</i> Scop.	<i>Geotrygon montana</i> (Linn.).
<i>Sterna antillarum</i> (Less.).	<i>Columbigallina passerina</i> (Linn.).
<i>Sterna dougalli</i> Mont. *	<i>Falco caribbæarum</i> Gmel.
<i>Anous stolidus</i> (Linn.).	<i>Ceryle alcyon</i> (Linn.).
<i>Ardea virescens</i> Linn.	<i>Coccyzus minor</i> (Gmel.).
<i>Ereunetes pusillus</i> (Linn.).	<i>Cypseloides niger</i> (Gmel.). †
<i>Tinga minutilla</i> Vieill.	<i>Chætura dominicana</i> Lawr. ‡
<i>Tringa maculata</i> Vieill.	<i>Bellona exilis</i> (Gmel.).
<i>Actitis macularia</i> Linn.	<i>Eulampis holosericeus</i> (Linn.).
<i>Totanus solitarius</i> (Wils.).	<i>Eulampis jugularis</i> (Linn.).
<i>Ægialitis semipalmata</i> Bonap.	<i>Melanerpes herminieri</i> (Less.).

*A series of specimens taken September 20 to 24 are mostly immature, and all have the bill entirely black. Nearly all have the feet black, but two examples have the bill black and the feet dark red.

†Twenty-three examples of this species, which show considerable variation in size and some difference in color.

‡The collection contained a single specimen of this Swift, which I cannot distinguish from Dominica and St. Lucia specimens.

<i>Tyrannus dominicensis</i> (Gmel.).	<i>Dendroica plumbea</i> Lawr.
<i>Elæna martinica</i> (Linn.).	<i>Dendroica petechia melanoptera</i>
<i>Blacicus brunneicapillus</i> Lawr.	Lawr.
<i>Quiscalus guadeloupensis</i> Lawr.	<i>Setophaga ruticilla</i> (Linn.).
<i>Euethia bicolor</i> (Linn.).	<i>Thryothorus guadeloupensis</i> Cory.
<i>Loxigilla noctis</i> (Linn.).	<i>Allenia montana</i> (Lafr.).
<i>Saltator guadeloupensis</i> Lafr.	<i>Cichlherminia fuscata densirostris</i>
<i>Vireo calidris</i> (Linn.).	(Vieill.).
<i>Cæreba dominicana</i> (Taylor).	<i>Cichlherminia herminieri</i> Lafr.
<i>Seiurus noveboracensis</i> (Gmel.).	<i>Cinclocerthia ruficauda</i> (Gould).

A FURTHER REVIEW OF THE AVIAN FAUNA OF CHESTER COUNTY, SOUTH CAROLINA.

BY LEVERETT M. LOOMIS.

THE PRESENT contribution to the ornithology of the Piedmont region of South Carolina resumes the subject as it was left by the 'Partial List' (Bull. Nutt. Orn. Club, Vol. IV, Oct., 1879, pp. 209-218) and the 'Supplementary Notes' (Auk, Vol. II, April, 1885, pp. 188-193).

The centre and chief scene of observation, furnishing the material for this and the earlier papers, has been the vicinity of the town of Chester, within a limit of five miles. Excursions have been made at different times, particularly during winter, to outlying parts of the County along the Broad and Catawba Rivers. These brief expeditions have revealed that a highly promising field lies immediately at hand awaiting exploration in common with the rest of the river portions of the Piedmont region. Besides affording the only really suitable situations for water birds in the County, these streams offer favorable avenues of approach for characteristic species of the Low-Country, which have not thus far been detected above the fall-line.

Even in the narrow area where the most effort has been expended there is still much to be learned. At the close of fourteen years, during which I have been able to devote much time to field study, I realize fully the verity of what Gilbert White long ago said, after more than forty years of observation at Selborne—

"new occurrences still arise as long as any inquiries are kept alive." Knowledge of this sort is gained slowly. The power to grasp expands with advancing experience, and facts accumulated in earlier years, the chief import of which was not perceived at the time of their gathering, are seen in the end to be conspicuous illustrations of great ornithological truths. In an extended series of years seasons, too, happen that are peculiarly propitious for investigation in certain directions, and circumstances then become palpable that have previously eluded satisfactory interpretation. Such, in an eminent degree, were December, 1889, and January, 1890.

The birds, species and subspecies, added since the publication of the last list, number twenty-three, raising the total, exclusive of the English Sparrow, to two hundred and two. These are believed to represent only about four fifths of the normal avifauna of the County, the river districts being expected to yield the bulk of the remaining fifth. Forty-two are 'resident'; sixty-seven are known as migrants; fifty, besides 'residents,' occur in the winter season; thirty-six have been found to be breeding summer visitants; seven are of doubtful rank, owing to insufficient observation. The general character of the fauna is Louisianian. The near proximity of the mountains exerts a modifying influence upon it, lessening the force of the Louisianian, however, rather than bringing into marked prominence the Carolinian.

*The Trans-Appalachian Movement.**—A peculiar complexion is given to the bird fauna of this region through the infusion of such characteristic Western species as *Anmodramus lecontei* and *Scolecophagus cyanocephalus*. If these birds could be dismissed with the simple statement that they were stragglers that had wandered from their usual habitat, their presence would be of little moment, but when it is understood that the former has occurred in considerable abundance and in successive seasons, the matter assumes a very different aspect, and one urgently requiring investigation. Besides the two birds mentioned, quite a number of others, commonly regarded as belonging to the western side of the Appalachian highlands, have been taken, as well as most of the rarer land species of the Atlantic slope

*This portion of the article was read, under a separate title, before the Eighth Congress of the American Ornithologists' Union.

whose centre of abundance lies in the interior. The first inquiry that arises is, how do these birds get here? In seeking an answer to this, an obstacle is encountered at the outset—the common obstacle that confronts every student who endeavors to arrive at conclusions based upon geographical distribution. While it is idle to look for absolute data for generalization, yet sufficient is known to remove the subject from the realm of mere conjecture.

The study of the list of trans-Appalachian birds occurring in Chester County reveals that they belong to four categories, as follows:—

1. Those, appearing in winter, which have not been reported on the Atlantic slope, so far as known, north of the South Atlantic States,—*Scolecophagus cyanocephalus*, *Calcarius pictus*, *Ammodramus leconteii*.
2. Those, also winter visitants, whose breeding range extends eastward from the Mississippi Valley and the region of the Great Lakes into the North Atlantic States,—*Otocoris alpestris praticola*, *Quiscalus quiscula aeneus*.
3. Those which have been found numerously in Chester County during migrations and also, though sparingly, at such times on the Atlantic slope as far north as Washington and New England,—*Dendroica palmarum*, *Seiurus noveboracensis notabilis*.
4. Those formerly considered as trans-Appalachian which are now known to breed on both sides of the mountain system, though ranging farther north on the western,—*Peucaea aestivalis bachmanii*, *Dendroica dominica albilora*.

There are two movements of 'Western' birds, distinct from each other, demanding exposition. Both are intimately connected with the general southward and northward migrations. The first is a movement from northern latitudes in fall and winter, the second from southern latitudes in spring. In the order mentioned the movement in a southerly direction is the first presenting itself for consideration. To understand fully the significance of this movement it is necessary to examine in detail the distribution of the birds of categories one and three. From the records it is found that the range of *Dendroica palmarum* stretches diagonally across the continent from the Great Slave Lake in the interior of British America to the Bahamas and Greater Antilles. In the central portion of the United States

Kansas appears to be its western limit. In the east it extends, numerous, to Ohio and the South Atlantic States. The trend of the comparatively limited breadth of territory outlined indicates that this species migrates from its breeding grounds, in the northwest, in a southeasterly direction. The range of *Ammodramus leconteii* and *Calcarius pictus* furnishes in a measure a parallel example. Both breed in the interior to the northwestward, the latter north to the Arctic coast, and both migrate southward and eastward in fall and winter to Illinois and South Carolina, but, in following the Great Plains to Texas, they bear further to the west than *Dendroica palmarum* does. The general tendency, however, of the movement as a whole is southeasterly. *Scolecophagus cyanocephalus* and *Seiurus noveboracensis notabilis* differ from the others in their occurrence along the Pacific coast and in the southerly extension of their breeding range. In the east *cyanocephalus* is known only as an occasional winter visitant, while *notabilis* is a regular migrant there. From the foregoing it is seen that the movement, in its entirety, of these birds from the interior to the South Atlantic States is a southeasterly movement. Their scarcity or absence at the North on the Atlantic slope evinces that the highlands are crossed in the immediate region.

The presence of *Dendroica kirtlandi* near Washington in autumn (Auk, Vol. V, April, 1888, p. 148) is explained by this southeasterly movement. It seems also that the numerous isolated autumnal instances of trans-Appalachian birds in the North Atlantic States should not be regarded as mere accidents, but rather as further manifestations of this movement—the outskirts of the great wave that sets across the continent after the breeding season in a southeasterly direction.

It is not intended to convey the idea that all migration over the mountains is strictly southeasterly. Species occurring east of the eighty-eighth meridian might follow a direct line south, particularly where the breeding range touches the mountains. Such movements might be expected of *Otocoris alpestris praticola*, *Quiscalus quiscula æneus*, *Chondestes grammacus*, *Dendroica cærulea*, *Dendroica dominica albilora*, *Dendroica palmarum*.

The extension eastward to New York and New England of the breeding habitat of *Quiscalus quiscula æneus* and *Otocoris*

alpestris praticola raises the question whether Chester County examples do not come from the eastern portions of those sections as well as from west of the mountain system. The abundance of the former in New England and its appearance here during fall associated with *quiscula* proper seems to signify that birds are drawn from both regions. *Otocoris alpestris praticola*, however, breeds too sparingly near the coast to supply many representatives by the seaboard route.

So far as the South Atlantic States are concerned, the number of characteristic species involved in this movement is at present a matter of speculation. A thorough survey of the region alone will determine the strength of the representation as well as the relative abundance of the birds now known to occur.

Whether there are meteorological conditions that specially favor southeasterly migration, might be made a theme of profitable inquiry. As set forth beyond, a correlation has been found to exist between cold and warm waves and the fluctuations in abundance of *Otocoris alpestris praticola*.

The movement from the south must now in turn be examined. The absence in spring of birds of the first category, and the rarity of those of the third, north of the South Atlantic States prove that the return over the mountains is effected in the southern portions of the system. It is obvious that the most direct route for winter residents of the Bahamas and Florida to the interior is across the mountains of the South Atlantic States. *Dendroica kirtlandi* in April in the lower part of the State (Auk, Vol. III, July, 1886, p. 412) is indication of the route from the Bahamas, as also is *Dendroica palmarum* in Chester County from the region immediately to the south and southeast. *Seiurus noveboracensis notabilis in transitu* on the Dry Tortugas (*vide* Scott, Auk, Vol. VII, p. 314) and in Chester County, vaguely marks out a line of migration from northern South America. The two instances reported from the vicinity of Washington (Auk, Vol. V, April, 1888, p. 148) are accounted extreme exemplifications of the movement from the southward, *Dendroica palmarum*, further north, furnishing an additional illustration. Whether the mountains,—especially influential factors in distribution when the season of reproduction approaches,—deflect the line of migration of these outlying birds, causing them to cross higher up, or whether they journey by a more easterly course, regardless of

land, cannot be affirmed without more definite data. The same uncertainty exists in the southerly movement as to the points of departure from the mainland, it being an open question whether all follow the coast to Florida, or whether the transit is made in the most direct way.

The comparative abundance of *Helminthophila peregrina* in fall in Chester County is seemingly due to transalpine migration, as the species is reported rare along the Atlantic slope at the northward. Its apparent absence in spring is probably occasioned by the majority following the Mississippi Valley at that season. *Geothlypis agilis* seems to afford a parallel case further north.

It may well be asked whether the southeasterly movement is confined to certain characteristic species, or whether it embraces many that are common both to the interior and to the Atlantic slope, or whether its proportions are vaster still, involving, to a greater or less degree, all the migratory birds of North America. The conformation of the continent favors such a movement. A glance at the map discovers the southeasterly trend of the coast along the Pacific from Cape Mendocino to the Isthmus of Panama. A migration extending through Mexico and Central America would be a southeasterly one, while a movement from the South Atlantic States to the outer West Indies would certainly be southward and eastward if not directly southeast.

To recapitulate, a wide-spread movement of characteristic trans-Appalachian birds occurs after the breeding season, sweeping over the country from the northwest to the southeast, the main portion of the eastern wing crossing the Appalachian highlands in the South Atlantic States, its extreme outskirts reaching northward along the whole Atlantic slope. Some of the representatives of this movement stop short their journey on arriving on the South Atlantic seaboard, while others, occurring there as transients or wintering numerous, extend their migrations beyond to the Bahamas and Greater Antilles and northern South America.

In the complementary movement from the southeast to the northwest, the western winter visitors of the South Atlantic States disappear behind the mountains and their places are filled by the returning migrants, and the movement is felt along the whole Atlantic slope, strongly in the South Atlantic States and

teebly to the northward. It is not strange then that Chester County, a mere point in the pathway of these vast movements, should feel their influence in so marked a degree.

The appended notes pertain (1) to the birds added since the appearance of the last list; (2) to those, noteworthy ones, previously noticed, which have been found in greater abundance or at other seasons than recorded; (3) to those reflecting in an especial manner the different phases of the migratory movements, treated of at length beyond. The numbers below 141 refer to the 'Partial List,' from 141 to 180, inclusive, to the 'Supplementary Notes'; above 180 are additional. In the matter of dates the whole fourteen years have been passed in review and the normal extremes selected. The minor observations omitted in the present paper have been reserved for another connection.

181. *Urinator imber*. LOON.—Of the occurrence of the Great Northern Diver on the Broad and Catawba I have long been aware, but the fact of its presence has remained unverified by a specimen until the present year (1890) when a bird in immature plumage was shot April 26, on the latter river.

182. *Urinator lumme*. RED-THROATED LOON.—A young male was captured, alive and unhurt, on the morning of February 28, 1885, in a field of oats near the town of Chester. This locality, which is on the dividing ridge between the Broad and Catawba Rivers, is somewhat remote from any extended body of water, the nearest considerable stream or mill-pond being several miles distant. Attention was first directed to the bird by its loud and unusual cries. On removing the skin, the body was found to be very greatly emaciated.

183. *Porzana noveboracensis*. YELLOW RAIL.—In 1887 a female was shot Nov. 12, and a male Nov. 23. Dec. 10 of the same year another was seen. This latter instance seems to indicate that the species will ultimately prove to be a winter resident, but it should be borne in mind that the winter of 1887-88 was one of unwonted mildness in this region. In October, 1890, a fourth example was noted.

184. *Porzana jamaicensis*. BLACK RAIL.—Sept. 3, 1887, an adult female was killed with a pitchfork in a little hillside sink from which the grass was being cut.

As to the abundance of the Rails of our local ornithology, as well as of the dates of their appearance and disappearance, I am unable to speak with certainty. The time required for the systematic investigation of these points has heretofore been devoted to the study of the birds of the woods and fields.

185. *Nyctea nyctea*. SNOWY OWL.—During the early part of December, 1886, I saw an individual several times under circumstances that

dispelled all doubt from my mind as to its identity. That this Owl occasionally wanders southward to South Carolina has long been a matter of record. Bartram mentions its occurrence in his 'Travels' (second edition, 1794, p. 285), and Audubon ('Ornithological Biography,' Vol. II, p. 137) notes its presence at Columbia and in the vicinity of Charleston.

104. **Melanerpes erythrocephalus.** RED-HEADED WOODPECKER.—Red-headed Woodpeckers were common through the winter of 1877-78 in the immediate neighborhood of the County Seat. During the previous winter they were not present, but through several subsequent winters a few stragglers remained. Of late years, until the past season, when a single bird was observed, they have entirely forsaken its vicinity from October to April. Back in the County the case is somewhat different. In the winter of 1884-85 a colony was established in a large piece of original hardwoods four miles north of the County Seat, but they were not met with in this situation in succeeding winters until December, 1887, and then in greatly diminished numbers. Toward the close of December, 1884, they were common in the northeastern part of the County near Landsford on the Catawba River. I have not visited that section since in winter, and do not know whether they have regularly continued to reside there. A friend, however, has informed me of their occurrence in midwinter, 1888-89. During a ride of forty-five miles, taken December 29, 1885, through the northwestern portion of the County, in the vicinage of the Broad River, only a single individual was encountered, and this one, which was the only one seen during the winter, was within seven miles of the Court-House. In December, 1887, and January, 1888, considerable time was spent in riding over the country adjacent to the County Seat, but only very few 'Redheads' were noticed, and none nearer than four miles, and all on ground wholly unoccupied the winter before. During the winter of 1888-89 not one was seen, although several extended excursions were made. The past season (1889-90) extensive field investigation failed to reveal the presence of this species except in the instance mentioned.

From these observations it is apparent that a territory may be occupied one season and partially or wholly abandoned the next, and that in the lapse of time, with the shifting of the local centres of abundance, it may again come, in a varying degree, into favor as a winter resort. In the breeding season and during the height of the migrations there is, also, in a series of years, a fluctuation in the scale of abundance, but I have no personal knowledge of a complete desertion of a locality during the former period. I am unable to assign any satisfactory reason for their erratic distribution and migrations. The ordinary explanations advanced—unusual persecution, great changes in the face of the country, severity of seasons, obvious failure of the food supply—do not adequately account for their movements. It should be added further that these singular removals are so marked and well known that they have long attracted the attention of observant country residents.

22. **Otocoris alpestris praticola.** PRAIRIE HORNED LARK.—Mr. Henshaw's elaborate review of the Horned Larks led me in the winter of

1886-87 to study anew the birds of this locality. The result of this investigation showed that *praticola*, one of the newly described races, was at least an occasional visitant. With the view of determining the precise status of this subspecies, as well as of *alpestris* proper (the style currently believed to occur in upper South Carolina), systematic observations were made through the three following winters, but instead of finding *alpestris*, as had been confidently expected at the outset, only *praticola* was discovered. The appearance of Mr. Ridgway's 'Manual,' with its broadened characterization of the latter form, further disclosed the fact that a series of measurements taken at intervals during the decade previous to 1886 were typical of *praticola*, and that *alpestris* had never been secured. The uniformly small size of these examples had attracted my attention from the outset.

The past three winters were exceptionally mild throughout this region, and therefore apparently inauspicious for the occurrence of Prairie Horned Larks. However, the continuous effort put forth developed them in unexpected numbers. The earliest arrivals each year were noted during the last week of November, their coming being coincident with a colder term. Through the ensuing two months they were constantly present, and straggling bands remained until the close of February. During December and January the changes in temperature which occurred, though not extreme, were accompanied by marked fluctuations in abundance—the cold waves re-enforcing, and the warm ones diminishing their ranks. On several occasions an increase took place when there was no specially noteworthy fall in the mercury, but cold spells were prevailing in the northwest. While the periods of greatest abundance have been during the severest stresses of weather (as in December, 1876, and January, 1877, when the snow lay on the ground for the longest time in my remembrance), the last three seasons have demonstrated that these birds are not uncommon here during the mildest winters, and that their presence is not dependent upon extreme inclemency in the immediate vicinity. The companies in which they congregate have varied in extent, the past three winters, from little squads of half-a-dozen to flocks of above a hundred, the average being from twenty to thirty. In former years the gatherings have not differed materially in size, except in January, 1877, when a single assemblage of several thousand was met with after the snow had disappeared.

In recording the experiences of the previous winter in 'The Auk' for April, 1888, mention was made of the fact of the great excess in number of females. The subsequent two years have exhibited a similar preponderance—the males secured being less than twenty per cent of the total of females.

The particular attention paid of late to these Horned Larks has further revealed that they are extremely partial to certain restricted localities, and that considerable territory might be examined without their presence being detected, except when transient parties were passing overhead from one rendezvous to another. Each year these favored situations have been

re-occupied, while other locations apparently not dissimilar have been discarded. A single field is often the centre of attraction, and here the birds are always certain to be found. If persecuted they leave the spot with reluctance, repeatedly returning before seeking a retreat in some other quarter of their range—the flocks when broken up coming back in detached companies. In the times of greatest abundance they are more generally dispersed, the Northern hordes overflowing the narrow bounds held in occupancy in ordinary seasons. Barren upland pastures, where the grass has been cropped to the roots, and wind-swept grain fields are, above all other situations, chosen by them. Cotton-fields where the stalks are small and the ground free from grass are also much frequented. If these congenial haunts abound in small stones, a further attraction is afforded. In all, the color of the surroundings harmonizes so nearly with the color of the upper parts of the birds as to render them exceedingly inconspicuous.

I now believe that every year Prairie Horned Larks are regular visitors and that their reported absence in some winters was due to an inadequate knowledge of their habits and distribution.

In the subjoined table are the dimensions of forty-two males and two hundred and twenty-five females, representing two series; one of twenty-six males and one hundred and thirty-three females, procured during the winter of 1887-88, and the other of sixteen males and ninety-two females obtained during the ensuing winter. All the measurements that follow are in millimetres. They were originally taken in inches and hundredths and then reduced to the metric equivalents.

	Sex	Length		Extent		Ch'd of wing		Longest rectrix	
Maximum	♂	187.96	185.42	337.82	340.36	106.17	105.66	79.75	80.01
Minimum	"	176.53	175.26	320.04	317.50	99.82	99.31	69.85	70.10
Mean	"	181.36	180.34	330.96	326.39	102.87	102.61	75.94	75.44
Maximum	♀	173.99	173.99	320.04	317.50	99.82	99.82	73.15	73.40
Minimum	"	162.56	162.56	299.72	299.72	91.95	91.95	62.23	65.02
Mean	"	169.16	168.66	310.64	308.36	95.75	96.01	68.32	68.83

The maximum extremes were not derived from single specimens, and are thus not necessarily indicative of direct approaches toward *alpestris* or *leucolæma*. In the first series of females they were furnished by the combined dimensions of two birds. In the second the maximum wing, 99.82 mm., occurred in an individual whose length was only 166.37 mm., and tail, 69.34 mm., while the longest tail, 73.40 mm. appeared in one in which the entire length was but 171.45 mm., manifesting that the total length is diminished by the shortening of the body as well as by the shortening of the rectrices. The chief length, 173.99 mm., was attained in twelve instances in the first series and in but three in the second. The following measurements of females further attest the absence of a uniform variation in the proportions of many examples:—

Length	Chord of wing	Longest rectrix
173.99	99.82	72.64
166.37	99.82	69.34
173.99	98.29	70.86
171.45	96.52	73.40
166.37	97.79	71.37
163.32	97.02	67.56
168.91	93.98	66.80
168.66	98.80	71.12
168.66	94.74	70.61

The minimum extremes of the females for both seasons represent the actual size of the two smallest ones. In the males, however, these were obtained from different specimens. It will be noticed that the wing and tail measurements of the smallest males and the largest females overlap. Where there is such wide individual deviation, it is remarkable that the general averages of the two series differ so little. This is further illustrated in the appended table of the means of three groups of females—the product of three days' shooting (Nov. 24, 29, Dec. 8, 1888) in a single field:

No. Spec.	Length	Extent	Chord of wing	Longest rectrix
13	168.40	308.10	96.26	69.34
20	169.16	308.36	96.01	68.32
12	169.16	308.36	96.01	69.34

The great uniformity with which the Horned Larks of this section fall within the limits prescribed for *praticola*, evinces that they are drawn from the centre of distribution of the subspecies during the breeding season and not from the confines of the habitat of another form.

(To be concluded.)

DESCRIPTION OF A NEW SUBSPECIES OF CYPSELIDÆ OF THE GENUS *CHÆTURA*, WITH A NOTE ON THE DIABLOTIN.

BY GEORGE N. LAWRENCE.

Chætura dominicana colardeaui.

Chætura, LAWR. Proc. U. S. Nat. Mus. 1885, p. 623.

Male.—Crown, lores, and upper plumage black; rump brownish ash-color; upper tail-coverts brownish black; tail black; the spines project

three sixteenths of an inch beyond the webs; wings black; the secondaries and tertiaries at their ends are edged with ash; chin, throat, and upper part of breast dark grayish cinereous; lower part of breast and abdomen smoky brown; a stripe of clearer brown down the middle of the abdomen; under tail-coverts black; bill and feet black.

Length (skin) $4\frac{3}{8}$ inches; wing $4\frac{1}{4}$; tail to end of spines, $1\frac{1}{8}$; spines, $\frac{3}{16}$. Type in American Museum of Natural History, New York.

HABITAT.—Guadeloupe, West Indies.

REMARKS. This species at first sight somewhat resembles *C. dominicana* from Dominica, but differs in having the upper plumage rather blacker, and the ash-color of the rump less in extent; in their under plumage they are quite different, the new subspecies having the throat, neck and upper part of the breast grayish cinereous; the lower part of the breast and abdomen are smoky brown; while in the other the entire under plumage is of a clear brown, with a few grayish feathers on the upper part of the throat; in the Dominica bird the under tail-coverts are dark brown, and the feet yellowish; in the Guadeloupe bird the under tail-coverts and the feet are black; the tail feathers of the new subspecies are narrower than those of *C. dominicana*; in this the feathers are broader and continue so to their ends, those of the Guadeloupe bird being somewhat tapering.

It is with pleasure I confer upon this species the name of my friend, Dr. St. Felix Colardeau, who has shown much intelligent interest in procuring the birds of Guadeloupe.

I have been desirous of obtaining this bird ever since it was noticed in a list sent by Dr. Colardeau in 1885, and have had promises to endeavor to procure it from both him and his son; why it was not obtained sooner is explained in Dr. Colardeau's letter; he writes under date of August 5 as follows:

"After the return of my son from the United States he was so long and so dangerously ill from pleuro-pneumonia that I gave up entirely going hunting for birds, and my work away from woods and fields prevents me also to do as before. My son is now well again, and I have been able to make a few small collections. I have a number of sea and water birds which I intend to send you.

"This day I send you by mail the small Swift I have spoken of; they are very scarce in town, where I live now, and cannot get them any more, as we used to, at my old home in the moun-

tains. I succeeded in shooting this one from the window of my room about three months since.

"Perhaps it is a new bird, perhaps it is not; it is the same *Chætura* I described to you some years ago."

In a letter dated Nov. 11, in reply to one from me wishing more specimens, etc., he says:

"I always thought as you did at first, that the Swift I sent you was no other than the Dominican bird, *C. dominicana*, from the written description I had taken of it, when I could easily procure many specimens. I will try hard to send you more specimens, but I am no more residing where it is easy to get them.

"I believe I have already told you that the small Swift must breed here, as those we had shot on my plantation in June had hard shelled eggs ready to be laid."

Mr. Cory kindly lent me a specimen of this species collected for him by Mr. Winch in Guadeloupe, which agrees in every respect with the type.

NOTE ON THE DIABLOTIN.

Young Mr. Colardeau informed me, when here, that he understood the Diablotin had returned to Guadeloupe. I requested him to get all the information he could respecting it. Dr. Colardeau writes me:

"I do not believe the Diablotin is extinct in our Island; only we have no more the old sportsmen who used to go after them out of pure frolic, with plenty of dogs and black servants, when I was a child some fifty years ago. The Diablotin is not pure black, that I feel certain from distinct recollection, and you may consider the specimens sent by the old Dr. L'Herminier as correct, as he was one of those old sportsmen I have just spoken of, who, in company with my great uncles, grandfather and other relatives and friends used to go after them amongst the rocks and mountains surrounding the Soufrière. A few years ago, even as low as Camp Jacob, there was a Diablotin caught by a dog in a hole in the bank of a mountain stream. The master of the dog was satisfied to eat the bird, and I only knew of it when it was too late. The bird was black above and white below, crooked beak, and webbed feet."

From the description given by Dr. Colardeau of the specimen obtained in Gaudeloupe lately, it was probably *Æstrelata hæsitata*, which species Prof. Alfred Newton determined the specimens sent by L'Herminier to Lafresnaye to be.

Pere Labat gives a black figure of it, and also describes it as being black; the question arises whether there are two birds bearing the name of Diablotin, or whether his description is erroneous.

DESCRIPTION OF A NEW SPECIES OF *RAMPHOCELUS* FROM COSTA RICA.

BY GEORGE K. CHERRIE.

Ramphocelus costaricensis sp. nov.

Above, whole head varying from a dusky slate black to a slate gray; back and scapulars dusky yellowish olive; rump and upper tail-coverts ochraceous rufous of varying intensity in the different specimens. Wings dusky brownish black, inner webs of quills darkest; tail blackish. Below, chin and throat grayish; breast ochraceous rufous like the rump; the rest of lower parts yellowish olive, darker along the sides. "Bill black with plumbeous base. Feet, dark plumbeous." Female similar.

Measurements (in inches) of six skins.

Number	Locality	Date	Sex	Wing	Tail feathers	Exposed culmen	From nostril to tip of bill	Gonys	Tarsus	
2181	Pozo Azul	Nov. 10, 1887	♀	3.14	3.20	2.74	.60	.50	.38	.94
2182	" "	" 8, "	♀	3.07	3.20	2.75	.58	.50	.37	.88
3271	" "	Sept. 12, 1889	♀	3.05	3.22	2.92	.63	.50	.36	.85
3272	" "	" " "	♀	2.95	3.19	2.74	.64	.52	.37	.86
3273	" "	" 9, "	♂	3.06	3.30	2.87	.63	.50	—	.92
3274	" "	" 9, "	♂	3.16	3.10	2.65	.62	.50	.38	.87
Average				3.07	3.20	2.78	.62	.50	.37	.89

HABITAT.—Pozo Azul, Costa Rica.

Types in the Costa Rica National Museum, numbers 2181 and 2182, females collected in November, 1887, and numbers 3271, 3272, 3273 and 3274, two males, one female and one in which the sex is not indicated, collected in September, 1889. The six examples were collected and presented to the Museum by Señor Don José C. Zeledón.

The general coloration of this bird is very similar to that of the females of *Ramphocelus passerinii*, but while in many of the females of the latter species the breast and rump is brighter colored, the color is of a rich golden yellowish olive not in any way resembling the ochraceous rufous of the present species; neither is the tail so dark, being dusky brownish black instead of clear dusky black. The two are distinguishable at a glance. The wing formula is also slightly different, as out of twenty-five examples of *passerinii* examined only one was found having the first primary as long as the eighth; while in the new species the first primary is intermediate between the seventh and eighth.

The bill is similar in form to that of *R. passerinii*, but there is no appreciable difference between that of the male and that of the female. It is on this character,—the form of the bill, with “peculiar enlargement of the naked base of the lower mandible”—together with the general resemblance in pattern of coloration, so similar to that of the females of *R. passerinii*, that I have been led to refer the species to the genus *Ramphocelus*. I am informed by Mr. Zeledón that it has exactly the same habits and call-notes. In the sexes being alike, one of the characters hitherto held as common to the genus is destroyed. But the form of the bill, together with the pattern of coloration, seems to me to exclude it from the genus *Phlogothraupis*, in which the sexes are alike. The only points in which it agrees with that genus are the similarity of the sexes and the first primary being intermediate between the seventh and eighth. In the nine specimens of *P. sanguinolenta* in the collection I find that eight have the first primary intermediate between the seventh and eighth, and in the other example the remiges are not fully grown. But this latter character may be shared by some other members of the genus *Ramphocelus*; not having specimens for examination I am unable to say.

R. passerinii is slightly the smaller, the average measurements of twenty specimens from the collection, ten males and ten fe-

males being as follows:—Wing, 2.96 inches, tail, 3.13; tail-feathers, 2.71; exposed culmen, .57; nostril to tip of bill, .48; gonys, .36; tarsus, .85.

R. costaricensis seems to be an entirely local species, differing from *R. passerinii*, of which species the Museum possesses a large series from various localities, both on the Atlantic and on the Pacific sides of the Cordillera, including Pozo Azul where the two are found in company. Pozo Azul is situated about thirty miles southwest of San José, just at the foot of the hills where the level belt of the Pacific coast begins. For this reason and from the fact that I have not met with the bird in the extensive series of specimens I have examined from the Atlantic region, I am inclined to believe it a species confined to the southwest coast region.

I would here express my thanks to Mr. J. C. Zeledón for kind suggestions in regard to the present paper.

THE BIRDS OF ANDROS ISLAND, BAHAMAS.

BY JOHN I. NORTHROP.

THE ISLAND of Andros is the largest of the Bahama group, being about ninety miles long, and forty or fifty miles across at the widest part. The southern portion is separated from the northern by shallow waters called 'bights'; but these are so filled with cays, as to make it convenient to include all the islands under the general name of Andros.

Like all the others of the group, Andros is entirely of coral formation. The country is described by the natives as either 'coppet', 'pine-yard,' or 'swash.' The first term is applied to the thicket of angiospermous trees and shrubs that occupies the ridge along the eastern coast. In most places, this belt is very narrow, but near the southern end it extends several miles into the interior. Back of the coppet, the land is comparatively level, and is covered by a forest of the Bahama Pine (*Pinus bahamensis*). As one approaches the west coast, the pines become smaller and are mingled with palmettos; finally both cease, and one sees

spread before him thousands of acres of level plain, supporting scarcely any vegetation except countless dwarf mangroves. Here the ground is soft, and in wet weather almost entirely under water; hence the peculiar appropriateness of the local term 'swash.' Such is a brief description of the physical features of Andros. As might naturally be supposed, the coppet proved the best collecting ground for land birds, while the swash, and the lakes it contained, were well stocked with many aquatic species.

Although Andros is the largest of the Bahama Islands, it seems never to have been thoroughly explored by naturalists. The first record of Bahama birds is given by Catesby* who visited Andros. In 1859 and again in 1866 Dr. Bryant made a collecting trip through the Bahamas and published the results in the 'Proceedings' of the Boston Society of Natural History. His two papers are devoted to ornithology and contain several references to Andros. Mr. C. J. Maynard in 1884 spent some time on Andros and has published a few notes on its birds and described some new species.† Mr. Cory has also made an ornithological trip through the Bahamas, during which he visited the eastern coast of Andros. The results of his work are published in a well illustrated volume entitled the 'Birds of the Bahama Islands.' Mr. Ingraham has also visited Andros, but I have been unable to find any notes by him on its avifauna. These, I believe, are the only naturalists who have ever honored Andros with a visit.

As this island is separated from both Florida and Cuba by nearly the same distance (about one hundred and twenty miles) the writer thought that a collection of its birds might prove interesting. It may, however, be well to state that the object of the visit to Andros was not to make a collection of birds, and that lack of time and assistance prevented us from obtaining larger series. Before going to Andros, some time was spent on the island of New Providence, the western end of which is about twenty-five miles from the nearest point of Andros. There a few birds were collected, and these will be referred to in the list that follows. I was accompanied during the trip by Mrs. Northrop, who made notes on the occurrence of the birds, and more particularly on their songs and habits; and many thanks are due her for aid in the preparation of this paper.

*Nat. Hist. Carolina, Florida, and the Bahama Islands.

†American Exchange and Mart and Household Journal, Vol. III.

We reached the northern part of Andros on March 14, 1890, and left the southern end on the 3d of July, during that time sailing almost completely around the island; exploring the majority of the creeks on both the east and west coasts, and passing through the bights in the central part. But the greater portion of the time was spent in the various negro settlements that were scattered along the eastern coast, hence we had ample opportunities for observation, and for obtaining what is probably a quite complete collection of the birds of the island.

Dr. Allen has kindly annotated the list, and thanks are due to him and to his assistant, Mr. Chapman, for aid in determining several of the species.

The collection includes 286 specimens; and in it are represented 12 orders, 27 families, 56 genera, and 74 species. Of these one, that Dr. Allen has done us the honor to name *Icterus northropi*, is new to science; and *Nycticorax nycticorax nævius* is new to the Bahamas, while *Geothlypis rostrata* has hitherto been found only on New Providence.

Unless otherwise stated, all the birds mentioned in this paper were actually obtained, and are now in the Museum of the School of Mines, Columbia College. I have added to the usual common names the local names of the birds.

1. *Mimocichla plumbea* (Linn.). BLUE THRASHER.—This Thrush was common in the high coppet near Deep Creek, not far from the southeastern extremity of the island. Two specimens were also obtained near the northern end, but none were seen in the pines or in the swash on the west side. The bird hops about on the ground or on the lower branches of the trees, its black throat and red legs rendering it quite conspicuous. The stomach of one examined contained fruits. Those shot on June 28 were in condition to breed.

*2. *Galeoscoptes carolinensis* (Linn.). CATBIRD.—The Catbird was very common at Nicol's Town near the northern end of Andros during March and April, and the last specimen was seen at Mastic Point about May 23.

3. *Mimus polyglottos* (Linn.).—Locally known as Brown Thrasher and Mocking Bird. My specimens were all collected near the northern end of Andros, the first on March 25, the last on April 16. They were quite common about our house at Nicol's Town, and their song could be heard at almost any hour of the day. It was loud and varied, each syllable usually being repeated three times. It often sounded as if they

*The star prefixed to a number indicates that the species was observed by Mr. Scott at the Dry Tortugas. See beyond p. 69.

were trying to decline the familiar '*hic, hæc, hoc*' after a fashion of their own, and we imagined we could plainly distinguish '*hujus, hujus, hujus*,' '*huic, huic, huic*,' '*his, his, his*,' given with great emphasis. While on the western coast in June, we noticed what was undoubtedly one of these Mockingbirds, perched on the top of a palmetto. He was singing, apparently with all his heart, and attracted our attention by springing up into the air a few feet, then dropping to his perch again. This he repeated three times, singing all the while; we afterwards saw another bird go through the same performance.

The stomachs of the specimens examined contained the remains of the fruit of the gum elemi (*Bursera gummifera*), white ants, and pieces of snail shells.

[The three specimens referred to this species are indistinguishable from *M. polyglottos* of the Carolinas or Florida. They are hence very unlike the small form of *Mimus* from Inagua, recognized by Mr. Sharpe as *M. elegans*.—J. A. A.]

4. *Mimus gundlachi* (Caban.).—This was more common than the species above described, as we found it wherever we landed. Its song is louder, clearer, and more varied than that of *M. polyglottos*. Its food consists of fruits of various kinds, but in the stomach of one specimen some small bones were found, probably those of an *Anolis*. The ovaries of a specimen shot on May 15 were much enlarged. The inhabitants of Andros do not distinguish between these two species, calling both either Brown Thrushes or Mockingbirds.

[The series of seven specimens presents a wide range of variation in both size and color. In the largest specimen the wing measures 4.73 inches, the tail 5.33; in the smallest specimen the wing measures 4.23, the tail 4.60. In one specimen the cheeks, sides of the throat and the lower throat are thickly and heavily spotted, and the streaks on the flanks are very broad. In another the cheeks and sides of the throat are scantily barred and the lower throat is without spots. The other specimens are variously intermediate between these. The difference in size may be in part sexual.—J. A. A.]

5. *Polioptila cærulea cæsiogaster* (Ridgw.). BLUE-GRAY GNAT-CATCHER.—This species was very common in the low shrubs that grew in the pine-yard. It was a most confiding little bird, and would sit within a few feet of you, twitching its head from side to side and uttering its low, wheezy little song, apparently always very well pleased with its own efforts.

*6. *Compsothlypis americana* (Linn.). PARULA WARBLER.—This Warbler was collected in the northern part of Andros on March 26 and April 19. It was only seen in two localities, and was not common.

*7. *Mniotilta varia* (Linn.). BLACK-AND-WHITE WARBLER.—First seen at Nicol's Town on March 17. In a week or two they became quite numerous about the house, but none were seen after the end of April. The three specimens procured were all males. Their stomachs contained the remains of beetles.

*8. *Dendroica tigrina* (Gmel.). CAPE MAY WARBLER.—This species was not common. Specimens were collected on March 22, and on April 20, two on the northeast coast, one near the west side.

9. *Dendroica petechia* (Linn.). ANTILLEAN YELLOW WARBLER.—But a single specimen, a female, was obtained near Mangrove Key on June 24.

*10. *Dendroica caerulescens* (Gmel.). BLACK-THROATED BLUE WARBLER.—One specimen was brought to us in Nicol's Town, April 11; others were collected on April 19 at Red Bays on the northwestern end of Andros. They were quite common about the house for a few days, but none were seen after the above date.

*11. *Dendroica striata* (Forst.). BLACKPOLL WARBLER.—The specimens were all obtained at Conch Sound on May 19 and 20, although it was seen a little farther south on May 23, and even a day or two later.

12. *Dendroica vigorsii* (Aud.). PINE WARBLER.—This bird was one of the most common species in the pine-yard. The five specimens collected all proved to be females. The stomachs of those examined contained insects and small fruits.

13. *Dendroica discolor* (Vieill.). PRAIRIE WARBLER.—This was by far the most common of the migratory Warblers. It was collected on the northern end of Andros from March 22 to April 12, and a few were seen during the latter part of April.

*14. *Dendroica palmarum* (Gmel.). PALM WARBLER.—A single specimen, a female, was shot at Mastic Point, May 2; it was hopping about on the ground under the small mangroves.

*15. *Seiurus aurocapillus* (Linn.). OVENBIRD.—This species was collected in several localities on the northern end of the island. At Red Bays on the west side it was quite common, and the natives knew the bird well under the name of the 'ground walker'. All whom we questioned on the subject were certain that the bird remained throughout the year, and some said that they had seen its nest.* A specimen was collected by the writer on New Providence during January, and the last time that we observed it was in the first week of May. The stomachs of those examined contained the remains of insects.

[Four specimens taken on Andros Island, near the end of April, probably represent a local resident form, differing slightly from the North American stock in having the bill rather larger, the crown patch deeper orange, and the black lines bordering it and the black streaks below slightly heavier. Should these differences prove tolerably constant, they are too slight to render it desirable to designate the form in nomenclature.—J. A. A.]

16. *Geothlypis rostrata* Bryant. NASSAU YELLOWTHROAT.—This species is new to the island, all the specimens previously known being from the neighboring island of New Providence. The first we saw was brought to us by a boy at Nicol's Town, March 21. It was afterwards seen at Red

* Cory states that it is migratory.—Birds of Bahamas, p. 71.

Bays, Conch Sound, and later at Mangrove Key on June 25. It frequents the thick underbrush of the coppet, and was always seen quite close to the ground. *G. trichas* was also collected, but the difference between the two birds was very noticeable, *G. rostrata* being considerably larger and much lighter in color. Its song was also louder and sweeter.

[The single specimen, male, is nearer *G. rostrata*, than any other of the described forms, differing from it in its much shorter and slenderer bill, with the crown of a deeper and more bluish gray. Mr. Ridgway, who has examined the specimen, says: "Intermediate between type of *G. rostrata* and *G. tanneri*; bill entirely like the latter; color above brighter olive-green than in either." While doubtless representing a well-marked local race, it seems hardly worth while to give it a name on the basis of a single specimen.—J. A. A.]

* 17. *Geothlypis trichas* (Linn.). MARYLAND YELLOWTHROAT.—This species was seen on both the east and the west side of Andros from April 12 to 19, but there is no note of its appearance later. Of the five specimens collected, four were males. It is interesting to note that Dr. Bryant states that of a flock of birds flying past his vessel in the harbor of Grassy Creek, in the southern part of the island, on April 20, 1859, all were males.

* 18. *Setophaga ruticilla* (Linn.).—AMERICAN REDSTART.—This Warbler was first seen at Nicol's Town on April 10, and the last specimen was taken May 20; one was seen a month later, however, on the west coast.

Since this paper was written an interesting article by Mr. W. E. D. Scott has appeared in 'The Auk' * on the 'Birds Observed at the Dry Tortugas, Florida, during parts of March and April.' As I was collecting on Andros during the same time, I thought it would be interesting to note the species common to both places and have hence prefixed an asterisk to those mentioned in Mr. Scott's paper. A reference to his paper will show that he secured many Warblers that I did not, and a comparison of his dates with mine shows that with the exception of *Mniotilta varia*, *Dendroica tigrina*, *D. caerulescens*, and *Geothlypis trichas*, the birds were observed later in Andros than at the Dry Tortugas. The commonest Warbler at the latter place was *D. palmarum* of which I only secured one specimen, and no more were seen, while *D. discolor*, the commonest Warbler in Andros, was "not uncommon" with Mr. Scott. I doubt, however, if any inference of importance can be drawn from these facts.

In regard to the occurrence of the Warblers above-mentioned it may be worth while to state that they appeared in 'waves.' The most noticeable of these was on April 18. We had been at Red Bays on the west side for a week, and had seen very few birds about,—but a bird wave must have arrived during the night of the 18th, for the next day the grove about the house was full of birds,—the Black-throated Blue, the Blue Yellow-back, the Redstart. Black-and-white Warbler, and *Vireo altiloquus barbatulus* were seen here for the first time, and in considerable numbers.

* Vol. VII, p. 301.

19. *Cœreba bahamensis* (Reich.). BAHAMA HONEY-CREEPER. 'BANANA BIRD.'—Common throughout the island except in the swashes. The state of the generative organs of those taken near the end of March indicated that the birds were nearly ready to breed.

* 20. *Calichelidon cyaneoviridis* (Bryant). BAHAMA SWALLOW.—This beautiful Swallow was first seen on New Providence and was afterwards found to be abundant on Andros, particularly in the clearings. They generally flew quite close to the ground. Dr. Bryant in the 'Proceedings' of the Boston Society of Natural History, Vol. VII, page 111, says that of those collected by him up to April 28, the genital organs exhibited no appearance of excitement. On April 15 I collected a male with the testes much enlarged. The people told me that the Swallow breeds on the island, building under the rocky ledges; but we were not fortunate enough to find a nest.

21. *Vireo crassirostris* Bryant. LARGE-BILLED VIREO.—Common at most places on the island, and its cheery little song was almost constantly heard from the bushes and low trees that the bird frequents. On May 24 the generative organs of the male were enlarged.

[The four specimens seem distinctly referable to *V. crassirostris*.—J. A. A.]

* 22. *Vireo altiloquus barbatulus* (Cab.). BLACK-WHISKERED VIREO.—The first specimen of this bird was seen at Red Bays on the western side of the island, about April 18. On our return to the east coast we found it common, and later noted it as quite abundant at all our stopping places; and its song, so well described by Dr. Bryant as "*whip Tom Kelly, phew*," was one of the most common notes of the coppet. Dr. Bryant says that the seven specimens collected by him were all males, and thinks that the females "had not arrived by the 13th of May." As I collected the first female on May 24, having previously shot two males, this surmise is probably correct. The genital organs were noted as being enlarged from May 10 to June 5, when the last specimen was shot. Some of the birds were mated and apparently ready to breed.

23. *Spindalis zena* (Linn.).—This bird, called by the natives 'Tom James' Bird' and 'Robin Redbreast,' was very common in the coppet and the pines. It is one of the most conspicuous birds of the island, as well as one of the tamest, being quite often caught by the children. They seemed to be particularly fond of the fruit of the gum elemi (*Bursera gummifera*) and of the ripe figs. About May 20 the genital organs were enlarged.

* 24. *Piranga rubra* (Linn.). SUMMER TANAGER.—A single specimen, a male, was taken at Red Bays, April 19. We showed it to some of the natives, but they had never seen any like it. As its color would render it conspicuous, we may infer that it was not a regular visitor, but, as stated by Cory in his 'Birds of the West Indies,' p. 85, is only accidental in the Bahamas.

25. *Loxigilla violacea* (Linn.). VIOLET GROSBEAK.—Known by the natives as the 'Spanish Paroquet,' and quite abundant both in the coppet

and the pines. The males vary much in color, some being a brilliant black, while others are only dusky; this difference is more apparent in living than in dead specimens. Both sexes also vary in size. Some of these birds were brought to us alive by the negro children, and I soon learned by experience that they not only were pugnacious but could inflict quite a painful bite with their strong beaks. The generative organs of a male collected May 30 were considerably enlarged.

26. *Euethia bicolor* (Linn.). GRASSQUIT.—Very common both in the pine-yard and in the coppet, and the most abundant species of land bird on the island. They were very tame and allowed one to approach within a few feet, and while we were at Nicol's Town, several of them flew through the house at various times. They seemed to vary a great deal, some of the males having the head and breast black, while others were much lighter with only the throat and chin black, more like the average female; in these the under mandible were also much lighter. They seemed to have mated even in April, as they were usually seen hopping about in pairs.

27. *Icterus northropi* Allen. NORTHROP'S ORIOLE. — (See Pl. I.) Description and notes of this bird were published in the last number of this periodical (Vol. VII, p. 343).

28. *Agelaius phœniceus bryanti* Ridgw. BAHAMAN REDWINGED BLACKBIRD.—This bird was found generally distributed over the island, and was the presiding genius of its creeks and swashes. On the west coast especially his flute-like 'okralee' was the most familiar note. The birds were usually in small flocks, but there always seemed to be a great preponderance of males. Beyond doubt, however, the latter knew that their plainly dressed mates were near, much oftener than we, for a number of times we saw one half raise his wings so as to expose his brilliant epaulets, and sing with all his heart, fluttering his wings at every note. On two occasions while visiting a large mangrove near Mastic Point, we remained until after sunset and watched the Redwings fly out to roost there. The mangrove, about two miles from shore, was very large, and accommodated hundreds of feathered guests nightly. There were Man-o'-war Birds, White-headed Pigeons, and Louisiana Herons, but the most numerous as well as the noisiest lodgers were the Redwinged Blackbirds. They began to arrive about five o'clock, flying in from the mainland by twos and threes, or sometimes singly, until at last the portion of the mangrove that they occupied was seemingly alive with them. There must have been several hundred, males, females and young, and they kept up a constant chorus of hoarse chirps, screams and gurgling 'okralee's' until quite a while after the sun had set.

29. *Pitangus bahamensis* Bryant. BAHAMA KINGBIRD. 'FIGHTER.'—Not uncommon in many parts of the island. I have nothing to add to Dr. Bryant's account of its habits,* except that in the stomach of one some fruits of the gum elemi were found, showing that its diet was not entirely insectivorous.

* Proc. Boston Soc. Nat. Hist., Vol. VII, p. 108.

30. *Blacus bahamensis* (Bryant). BAHAMAN WOOD PEWEE.—This small species, of which Dr. Bryant says he only saw three specimens, all in the month of March, we found common on the island, not only in the coppet, but also in the pine-yard, and even occasionally in the swashes. At one of our stopping places two or three were always to be seen flying about near the house. They were very fearless, and several times flew so close as to touch us. One seemed to be particularly tame and would fly in at the door or window or about our heads with perfect unconcern. He had several favorite perches about the house, on one or another of which he was to be found at any time of day, cocking his little head from side to side, in wait for unwary flies.

31. *Myiarchus lucaysiensis* Bryant. RUFOUS-TAILED FLYCATCHER.—Not as abundant as the preceding species, but quite often noted, especially in the northern part of the island. Seven specimens were collected, all of which were males.

[The series of seven specimens agrees with one of Bryant's original specimens in the Lawrence Collection at the American Museum of Natural History, and differs from a small series of *M. sagræ* in being much larger, with the bill narrower, and in lacking the strong yellow suffusion of the lower abdomen, crissum and axillaries, which in *M. lucaysiensis* are either nearly pure white or only faintly tinged with pale yellow. It is apparently a strongly marked form.—J. A. A.]

* 32. *Tyrannus dominicensis* Gmel. GRAY KINGBIRD. 'FIGHTER'.—Quite common on the island, but most abundant near the coast. On May 31 we found a nest of this species in a small mangrove between tide marks. We had often seen similar nests before, but could not be certain what bird had made them. The nest was composed of small sticks rather compactly arranged. It was about nine inches in diameter and four or five inches in depth. In the centre was the cup, about three inches in diameter and two or three deep, very neatly lined with the fibre from some palm, probably from the spathe of the cocoanut palm. While examining the nest, the old birds flew from the shore and swooped over us, apparently much agitated. There were no eggs. On June 19 another nest was found in a mangrove on the west side of the island. This time I shot both birds and secured the nest and the one egg it contained. The latter was ovate in shape, 1.94 inches long, and .70 wide; white with a few small brownish and lavender spots and blotches, mostly near the larger end. It is stated that in Jamaica the nest of this bird "is seldom found in any other tree than that of the palm kind."* In Florida, however, it builds in the same situations as in the Bahamas. We found it a rather quiet bird, although it has been described as noisy. Once we saw it attack a Buzzard, and persistently drive it away.

33. *Chordeiles minor* Cab. CUBAN NIGHTHAWK.—Quite abundant; sometimes a dozen or more were seen flying about in the dusk. It is called 'Pyramidig' by the natives, on account of its cry which to us, how-

*Baird, Brewer and Ridgway, N. A. Birds, Vol. II, p. 322.

ever, sounded more like 'Pir-ra-me-quick-quick.' Those procured were shot in the daytime, on the western side of Andros, on June 17. They were sitting motionless on the hot, dry plain, and did not fly until we were within a very few feet of them. Even when disturbed they would alight again very shortly, and crouch close to the ground as before.

*34. *Antrostomus carolinensis* (Gmel.). CHUCK-WILL'S-WIDOW.—Three specimens were taken, two of which were disturbed in the woods during the daytime, and the other shot at dusk. Upon examining the stomach of the first one I shot, I found, amid an indistinguishable mass of brownish matter, a small bone, about half an inch long, that looked like the leg of a small bird. The next one examined contained in its stomach the partially digested remains of an entire Hummingbird, enough of which was preserved to identify it beyond doubt as *Sporadinus ricordi*. "The remains of a small bird are said to have been found within the stomach of one of this species."* One collected on May 15 contained remains of beetles and winged ants in its stomach. The testes were much enlarged, being about half an inch in length, but I am not sure that the bird breeds on the island.

35. *Doricha evelynæ* (Bourc.). BAHAMA WOODSTAR. — Well distributed over both New Providence and Andros, and as common in the pines as in the coppet. They are both curious and pugnacious, for one day we watched one chase a *Dendroica discolor* off a tree, and follow it some little distance, and while walking through the woods one of these birds would often alight close by or hover over our heads, as if examining us, and they flew through the house a number of times. They seemed to alight on the branches quite as frequently as other birds, and we often watched them perch and preen their feathers. Their little silvery trill was a quite common note in the pines, and for a while we thought it the song of some bird in the distance until we caught sight of the tiny songster almost above our heads. They do not always confine their attention to flowers, for one day a *Doricha*, after fluttering about the basket of flowers in my hand, made a dart at a good-sized spider in a web close by, and to our surprise demolished it and was off again in a moment. Of the numbers that we saw at New Providence, none were adult males, and of those collected on Andros there was a large preponderance of females.

On one occasion we had the good fortune to see a male who was evidently displaying his charms. The female was perched on a branch of a low shrub and before her the male was performing. His wings were vibrating rapidly in the usual manner, and thus supported in the air he swung rapidly to and fro, at the same time rising and falling, a movement very difficult to describe but almost exactly like that of a ball suspended by an elastic thread that stretches and contracts as the ball swings back and forth. This exceedingly graceful movement was executed through a small arc for a few minutes, and then was suddenly changed. The male expanded his tail, showing the cinnamon of the webs, and then

* Baird, Brewer and Ridgway, N. A. Birds, Vol. II, p. 413.

threw himself rapidly and almost violently from side to side in an almost horizontal line. During this latter part of the display a rustling sound was produced, probably by the vibrations of the wings, and a few short sharp notes were uttered. He then darted suddenly at the female who all the while had been sitting apparently unconcerned, seemed almost to touch her with his bill, and then flew rapidly away. Shortly afterward the female left, flying in another direction. During all of the display the two birds were facing each other and not more than six or eight inches apart, and the gorget and tail of the male were exposed to their fullest advantage.

36. *Sporadinus ricordi* Gerv. RICORD'S HUMMINGBIRD. — This was abundant on Andros, where all my specimens were obtained, none being seen on New Providence. Curiously enough, in this species, there seemed to be a great preponderance of males, and out of the seven specimens collected, but one proved to be a female. It may safely be said that most of those we saw were males, as the females are quite different, being smaller and lacking the beautiful blue-green gorget. The ovaries of the bird collected May 16 were not enlarged. It is probable that both *Doricha evelynæ*, and *Sporadinus ricordi* breed on the island; that one of them certainly does was evidenced by a nest that I was shown. It was lined with cotton, and was evidently the nest of a Hummingbird.

37. *Crotophaga ani* Linn. ANI. RAIN CROW. — Frequently seen on both New Providence and Andros, and always in small flocks of three or more. They were not as tame as most of the land birds, being on the contrary quite shy, and it was a difficult matter to get very close to them, as one of the flock was almost certain to espy you, and to notify the others with his loud warning 'wee-eeep,' a note in which the second syllable was much higher than the first, and more prolonged. On one occasion while walking through the woods during a rain, we noticed what looked like a square black board suspended to a pine some distance from the path. On investigation the black object was discovered to be seven *Crotophagas*, sitting in a row on a small dead branch, and crowded as closely together as possible. They were not asleep, however, for when I had approached within thirty or forty feet, a warning note was heard, then another and another, as they one by one took flight.

38. *Saurothera bahamensis* Bryant. GREAT BAHAMA CUCKOO. — The 'Rain Crow,' as the natives call this bird, was said to be abundant, but we got but one mature specimen and two young ones. Dr. Bryant states that they were quite common on New Providence in 1859. They fly about with a weak, wavy motion, and the people told us that they could catch them after a short chase, as they soon grew tired. Our specimens were obtained on the following dates, May 20, May 26, June 13; all on the eastern side of Andros. The one taken on May 20 was a mature female, and the ovaries were enlarged, some of the ova being over one fourth of an inch in diameter. In the stomach were grasshoppers and a small lizard. The stomachs of the others contained the remains of insects. Their bills were soiled, probably from investigating the leaves of the

epiphytic Tillandsias, as these ants found in their stomachs seemed to be of the same species as those inhabiting these plants. The description given by Cory* agrees with the two young specimens, but the adult has a black band near the end of the tail-feathers, which are tipped with dirty white, except the two middle ones. This agrees with the description given by Bryant.†

39. *Coccyzus minor maynardi* (Ridgw.). MAYNARD'S CUCKOO.—This bird, like the last species, was said to be common, but we succeeded in getting but four specimens, and during our stay saw about as many more. Their note was quite frequently heard, however, and usually from the mangroves or near by. The stomachs contained the remains of small insects and grasshoppers. On June 28 the testes were much enlarged (one half inch long).

* 40. *Ceryle alcyon* (Linn.).—BELTED KINGFISHER. Not uncommon on either New Providence or Andros, but no specimen was obtained. One was noted on the west side on April 23, and another on the east side two days later, although Dr. Bryant states that he saw none after April 1. We thought that we saw one May 26, but were not near enough in this instance to be certain.

41. *Dryobates villosus maynardi* Ridgw. BAHAMAN HAIRY WOODPECKER.—All our specimens were taken on Andros, where the bird was abundant, especially about the clearings.

* 42. *Sphyrapicus varius* (Linn.). YELLOW-BELLIED SAPSUCKER.—A single specimen, a female, was shot near Nassau about February 5.

43. *Strix pratincta* Bonap. AMERICAN BARN OWL.—Although but few of these birds were seen, I judge from what the people said that they are common. One that I shot at Nicol's Town had its home under an overhanging ledge on the precipitous side of a large hole about one hundred feet in diameter, known as the 'ocean hole.' Here in a deep recess, on March 25, we found two young ones not yet able to fly; and near by were the remains of the common rat of the island (*Mus rattus*). As is usual with this species, there was no nest, the birds resting on the ground. Around them for some distance the surface was covered with the rejected food balls, composed of the bones and hair of the rodent above mentioned, and as no other bones were noticed, it is probable that the Owl's principal article of diet was rat.

44. *Speotyto cunicularia dominicensis* Cory. BURROWING OWL.—The specimen doubtfully referred to this subspecies was shot at Nassau in February. Another, presumably of the same subspecies, was seen on the southern part of Andros in June, flying about the low shrubs near the shore, but we were not fortunate enough to get it.

[A single specimen is referred to this form, which it much more resembles than it does the Florida form, being much darker than the latter. —J. A. A.]

* Birds of West Indies, p. 159.

† Proceedings Boston Society Nat. Hist., Vol. IX, p. 280.

* 45. *Falco columbarius* Linn. PIGEON HAWK.—A single specimen, a male, was shot at Mastic Point on Andros on May 2. The bird was rare. A larger Hawk also was seen, but no specimens were obtained.

46. *Cathartes aura* (Linn.).—TURKEY BUZZARD. 'CROW.'—Very common on Andros, but more were seen on New Providence.

47. *Columba leucocephala* Linn. WHITE-CROWNED PIGEON.—Very abundant during the spring and summer. In the evening we often watched them flying from Andros in the direction of New Providence. The people said that they were going to Green Bay, a distance of fifty miles. A female shot on June 28 was almost ready to lay.

48. *Columbigallina passerina* (Linn.).—Called 'Ground Dove' and 'Tobacco Dove' by the natives. Exceedingly common both on Andros and New Providence. They generally fly about in small flocks of three to six, and are very tame.

49. *Zenaida zenaida* (Bonap.). ZENAIDA DOVE.—Not as abundant as the White-crowned Pigeon, but not uncommon in the coppet. They were shy, and were heard much oftener than seen.

50. *Charadrius squatarola* (Linn.).—A pair of Black-bellied Plovers was shot on the shore near Red Bays, Andros, on April 14.

51. *Ægialitis vocifera* (Linn.).—The Killdeer was first seen near Fresh Creek on the first of June, and on the 7th two were shot. They both proved to be males, with the testes enlarged to about .5 inch in diameter. The species was not abundant, and but few were afterward seen.

52. *Ægialitis wilsonia* (Ord). WILSON'S PLOVER.—Abundant and very tame. It was found on almost all the sandy beaches, where it would sometimes run along just ahead of us for nearly half a mile, appearing quite to forget that it could get out of our way by flying. This species is known to breed in the Bahamas.*

53. *Hæmatopus palliatus* (Temm.). AMERICAN OYSTERCATCHER. 'SEA-PIE.'—One of these birds was obtained near Red Bay on April 15. It was feeding on the extensive sand flats at low tide. Later, others were occasionally seen in similar places. It is said to breed in the Bahamas.†

54. *Himantopus mexicanus* (Müll.). BLACK-NECKED STILT.—A flock of these birds was seen in one of the lakes on the west side of Andros on April 21, and a pair were secured. We afterwards found them occasionally in the marshes. On June 17 we saw quite a number of these birds in the swash near Wide Opening. Our man said that this was the kind of place in which they bred, and later we found a nest. It was simply a slight depression in the ground, and contained four ovate eggs of an olive green-color, blotched with brown, measuring $1\frac{1}{4}$ to $1\frac{1}{2}$ inches by $\frac{1}{4}$.

55. *Symphemia semipalmata* (Gmel.). WILLET.—Commonly known as 'Tell-Bill-Willy.' Very abundant in all the creeks and swashes. The ovaries of those shot on May 31 were much enlarged.

* Cory, Birds of Bahamas, p. 14.

† Bryant, Proc. Bost. Soc. Nat. Hist., VII, p. 121.

*56. *Actitis macularia* (Linn.). SPOTTED SANDPIPER. 'SANDBIRD.'—One specimen, a female, was shot on the west side of the island, April 21, and was the only one seen during our trip. As Cory obtained only three specimens in 1879, it is doubtful if it is a resident.

57. *Rallus coryi* Maynard. BAHAMAN RAIL.—A single specimen from Conch Sound, Andros, April 15. It was shot and skinned by Mr. Alexander Keith, a Scotch gentleman, to whom the writer takes pleasure in acknowledging his indebtedness for this and many other favors, while on Andros. This bird was known as the Marsh Hen, and is said by the people to be common, but we never met with it again. On May 28 a woman brought us three eggs that she said were those of a Marsh Hen. They are ovate to elongate-ovate in shape, and are nearly cream color with chocolate spots and blotches irregularly distributed over the entire surface but much more numerous at the larger end. Mingled with these chocolate spots are others of a lavender gray. The eggs are of the following dimensions: 1.60 X 1.30; 1.70 X 1.22; 1.70 X 1.20 inches.

[A single specimen in fine (unworn) plumage is provisionally referred to *Rallus coryi*. It is, however, about the size of ordinary *R. crepitans*, from which it differs in the gray edgings of the plumage being much broader than in even extreme examples of that form, resulting in a generally grayer effect.—J. A. A.]

58. *Ardea herodias* Linn. GREAT BLUE HERON. 'ARSNICKER.'—Not uncommon.

59. *Ardea rufescens* Gmel. REDDISH EGRET.—Abundant in the swashes. The white phase of this bird was also common; many were seen, and three specimens were collected.

60. *Ardea tricolor ruficollis* (Gosse). LOUISIANA HERON. 'SWITCHING-NECK.'—Two pairs were obtained at Mastic Point in May. They were breeding in a large mangrove, about a mile and a half from the shore. These birds agree with Ridgway's description (Manual N. A. Birds, p. 131) except that the upper part of the throat is not white but rufous mixed with white. These also agree with Cory's description of *A. cyanostris*. But a specimen collected on the western side of Andros answers to Cory's description of *A. leucogastra* var. *leucoprymna*, and differs from the above specimens in the following points. The forehead and crown are much darker, being quite black; the throat has more rufous, and the neck is darker. The nest of the Mastic Point birds was composed of small mangrove sticks, laid so as to make a circular structure nine inches in diameter and three or four deep. There was a slight depression in the top, in which were placed a few sticks, parallel to each other, and on these were four eggs. The latter vary in shape; some being ovate, while others are almost equally pointed at both ends. They are nearly malachite green* in color, but with a slightly bluer tinge. The measurements are as follows: 1.71-1.84 X 1.29-1.34 inches.

*61. *Ardea cærulea* Linn. LITTLE BLUE HERON.—One specimen,

* Ridgway, Nomenclature of Colors.

shot at Stafford Creek May 5. No more were seen, which seems curious, as Dr. Bryant regarded this as the most common species of Heron;* and Cory states that it was abundant during the winter, but no adults were taken by him.† My remarks, however, apply only to Andros, and the bird might be common in other localities.

62. *Ardea bahamensis Brewster*. BAHAMA GREEN HERON.—Locally known by the expressive name of 'Poor Joe.' We found it quite abundant in the creeks and swashes, and at Fresh Creek collected what is very probably the young of this species, hitherto undescribed. The top of the head is clove brown with a slightly greenish gloss, streaked with cinnamon rufous. The rest of the head, front of the neck, and the breast, are white striped and mottled with sepia and bistre. The back and the remainder of the neck are olive, having the feathers edged with cinnamon rufous. The tail is similar to the adult. Lower parts are gray, the feathers being edged with white; and the scapulars and wings are clove brown, the coverts having an elliptical mark of wood brown and being edged with cinnamon rufous; the rest of the wing feathers having a deltoid mark of white at the end. The bill is ochre yellow, darker above, and shading into black near the end of the upper mandible. Legs olive.

*62. *Nycticorax nycticorax nævius (Bodd.)*. 'GOLDEN.'—The Black-crowned Night Heron is new to the Bahamas, and is said by the people to be abundant, although we did not see very many individuals. Two were secured at Conch Sound, March 30.

*64. *Nycticorax violaceus (Linn.)*. YELLOW-CROWNED NIGHT HERON.—About as abundant as the last species. Both the above species of *Nycticorax* are locally known as 'Goldens,' pronounced 'gaulings.'

65. *Phœnicopterus ruber Linn.*—A few Flamingoes were seen on the western coast of Andros in April; but later, in June, when the breeding season had commenced, we found them very abundant. A pair were shot on June 18, and they were then ready to lay. We were told that one of their breeding places was near Big Cabbage Creek, and a day was spent in an unsuccessful attempt to find their nests. They were described to us, however, by reliable people, who also stated that the birds sat upon their nests 'like any other bird,' and not with their legs hanging down on either side. The birds are exceedingly shy, and in the open swashes it is difficult to get within shot; for while stealing warily toward them, you are very apt to hear a warning 'gong, gong,' and off flies the entire flock, a streak of flame against the sky. The Flamingoes, when feeding, push their head into the mud under water; and this fact is taken advantage of to secure them. While the head is under water the negro walks rapidly forward, taking about ten steps and then stopping. By that time the bird will probably lift its head and look around. The negro stands motionless and screens his face with a branch of a tree until the Flamingo, apparently satisfied that the new object is inanimate, quietly resumes his

* Proc. Bost. Soc. Nat. Hist., VII, p. 120.

† Birds of the Bahamas, p. 171.

feeding, and the negro advances as before. I was assured by intelligent men that in this way they had sometimes captured the birds alive with their hands. That the bird feeds in the manner described above is well shown by its mouth, which is peculiarly adapted to sifting from the mud any mollusks or crustaceans that might serve as food, and the gape of the bill when opened to its fullest extent is only about half an inch. We were also told that a screen is sometimes built of palm leaves, and behind this the native can easily advance within shot of the flocks. A large number of young birds are yearly destroyed by the people for food. We ate the bodies of those we obtained and found the flavor most delicious. We had for a long time been living practically upon flour and hominy, and this may have made the Flamingo seem better than it really was; nevertheless I think it would bear comparison with any of the much sought after game birds. The stomachs of the pair I obtained contained no fish, but many small shells and much mud.

66. *Dendrocygna arborea* (Linn.). TREE DUCK.—A flock of Ducks was seen in a lake on the west side on April 21, but we could obtain no specimens. A negro who was with us said that they were 'Whistling Ducks' and, as Cory * states that this species was quite abundant on Andros, the negro was probably right. I was told that earlier in the year the Ducks were very numerous on the swashes. The ground about the lake mentioned was pitted with shallow holes about two to four inches in diameter which our man said had been made by the Ducks while feeding, when the place had been covered with water. I also saw a smaller Duck near Wide Opening on June 17. In answer to my questions, I was told that it was a 'Summer Duck'.

* 67. *Fregata aquila* (Linn.). MAN-O'-WAR-BIRD.—A number of these birds had their roosting place in the large mangrove near Mastic Point, already spoken of in connection with the Red-winged Blackbirds. We were told that formerly they used to breed there, but that of late years they had gone farther from the settlement.

* 68. *Pelecanus fuscus* Linn. BROWN PELICAN.—A few seen, and one, a young bird, obtained.

* 69. *Phalacrocorax dilophus floridanus* (Aud.). FLORIDA CORMORANT.—Cory in his 'Birds of the Bahamas' states that this is an abundant species, but in his 'West Indian Birds' says it is accidental in the Bahamas. We often saw it, and on June 16 while sailing through the Northern Bight, found them breeding on a small island known as Cormorant Cay. Here were old and young birds, some not able to leave the nest, but the majority able to walk. Those still in the nest were covered with a soft sooty down, and their gular sacks were pale yellowish white, darker near the bill. The nests were about eighteen inches in diameter, and about one foot in height, roughly constructed of sticks.

* 70. *Anous stolidus* (Linn.). NODDY.—A flock of these birds was seen near Fresh Creek, on June 6. They were occasionally seen afterward.

* Birds of Bahamas, p. 183.

* 71. *Larus atricilla* Linn. LAUGHING GULL.—Abundant. First noted early in April.

* 72. *Sterna maxima* Bodd. ROYAL TERN.—One specimen shot April 14 on Long Sound on the northern coast of Andros. A few more were seen, but the bird was not common.

* 73. *Sterna fuliginosa* Gmel. SOOTY TERN.—Since our return a specimen of this bird has been kindly sent to us by Mr. Alex. Keith of Andros. We saw none of this species while on the island.

74. *Sterna anæthetus* Scop. BRIDLED TERN. — Abundant on a small bay near Fresh Creek, where they breed. The people call this and the preceding species 'egg birds,' and during the season collect and eat their eggs. They were not breeding when we were at Fresh Creek early in June, but they were almost ready to breed.

* 75. *Sterna antillarum*, Less. LEAST TERN.—Abundant off Fresh Creek on a small cay near the larger one occupied by the Bridled Tern; neither, however, seemed to trespass on the ground of the other.

EIGHTH CONGRESS OF THE AMERICAN ORNITHOLOGISTS' UNION.

THE EIGHTH CONGRESS of the American Ornithologists' Union was held in the lecture hall of the United States National Museum, Washington, D. C., Nov. 18-20, 1890, the President, Dr. J. A. Allen, in the chair. There were present twenty Active Members and eighteen Associate Members.

The Secretary's report gave the membership of the Union at the opening of the present congress as 465, constituted as follows: Active Members, 50; Honorary Members, 21; Corresponding Members, 72; Associate Members, 322;—the total increase for the year being 65.

During the year four Honorary Members and two Associate Members have died, and one Associate Member has resigned. The Honorary Members were Dr. Ladislaus Taczanowski of Warsaw, Russia; John Henry Gurney of Northrepps, England; William Kitchen Parker of London, England; and Dr. F. von Krauss of Stuttgart, Württemberg. The Associates were Henry D. Minot, killed in a railroad accident near New Florence, Penn.; and Gideon Mabbett of Rodney, Miss. The resignation was that of Miss Ellen King.

Two Honorary Members were elected, viz., Graf Hans von

Berlepsch of Münden, Germany, and George N. Lawrence of New York; and one Corresponding Member, Dr. Paul Leverkühn of Munich, Bavaria; and eighty-four new members were added to the list of Associates.

The finances of the Union, as exhibited by the Treasurer's report, are in good condition, there being no outstanding liabilities and a balance in the treasury.

At the call for election of Officers, Dr. J. A. Allen, having served for seven years as President, declined to be a candidate for the office, and Dr. Coues also withdrew his name for re-election as Vice-President. The officers elected were D. G. Elliot, President; Robert Ridgway and William Brewster, Vice-Presidents; John H. Sage, Secretary; William Dutcher, Treasurer. The vacancies in the Council occasioned by the above election and by Mr. Lawrence having been made an Honorary Member, were filled by the selection of Dr. J. A. Allen, Dr. Elliott Coues, and Col. N. S. Goss.

On the call for reports of Standing Committees, Dr. Elliott Coues, chairman of the Committee on Avian Anatomy, read his report, and requested that the Committee be continued, and that Mr. F. A. Lucas be made an additional member of it, which was duly acceded to by the Union.

Dr. C. Hart Merriam, Chairman of the Committee on Migration and Geographical Distribution of North American Birds, stated that the work of the Committee had been transferred to the Department of Agriculture and requested that the Committee be discharged.

Mr. George B. Sennett, Chairman of the Committee on Protection of North American Birds, stated that no additional legislation had been made, but a general feeling was manifested in the different States to protect song birds, and desired to report progress. No formal report was received from the Audubon Monument Committee, on account of the absence of the Chairman, Dr. G. B. Grinnell, and the Committee was continued.

The Amendments to the By-Laws proposed at the session of the seventh congress were then considered; part were adopted, part were rejected, and others amended and referred to the next congress for ratification.*

*See under the department of 'Notes and News' in the present number of 'The Auk.'

Dr. Arthur P. Chadbourne was appointed a delegate to represent the American Ornithologists' Union at the coming International Ornithological Congress to be held at Budapest, in May, 1891.

The remaining time of the session was devoted mainly to the reading of scientific papers, of which the following is a list.

1. The American Ornithologists' Union — A Seven Years' Retrospect. Dr. J. A. Allen.
2. Seed-planting by Birds. Walter B. Barrows.
3. A Study of Bird Waves in the Delaware Valley during the Spring Migration of 1890. Witmer Stone.
4. Our Present Knowledge of the Neotropical Avifauna. Frank M. Chapman.
5. The Present Status of the Ivory-billed Woodpecker. E. M. Hasbrouck.
6. Phalaropes at Swampscott, Mass. W. A. Jeffries.
7. Spring Migration of the Red Phalarope. H. G. White.
8. Some Observations on the Breeding of *Dendroica vigosii* at Raleigh, N. C. C. S. Brimley.
9. The Trans-Appalachian Movement of Birds from the Interior to the South Atlantic States, viewed chiefly from the Standpoint of Chester, S. C. Leverett M. Loomis.
10. A Further Review of the Avian Fauna of Chester County, S. C. Leverett M. Loomis.
11. The Birds of Andros Island, Bahamas. Dr. John I. Northrop.
12. Remarks on a Few Species of Andros Island Birds. Dr. J. A. Allen.
13. Observations upon the Classification of the United States Accipitres, based upon a Study of their Osteology. Dr. R. W. Shufeldt.
14. Some Notes concerning the Evening Grosbeak. Amos W. Butler.
15. Instinct, Intuition and Intelligence. C. F. Amery.
16. The Habits of the American Golden Plover in Massachusetts. Geo. H. Mackay.
17. Some Bird Skeletons from Guadalupe Island. Frederic A. Lucas.
18. On the Tongue of Hummingbirds. Frederic A. Lucas.
19. An Experimental Trial of a New Method for the Study of Bird Migration. H. G. White.
20. Correction to Revised Catalogue of the Birds of Kansas. N. S. Goss.
21. Second Occurrence of the White-faced Glossy Ibis (*Plegadis guarauna*) in Kansas. N. S. Goss.
22. Remarks on the Primary Faunal Divisions of North America. Dr. C. Hart Merriam.
24. Exhibition of a New Owl from Idaho. Dr. C. Hart Merriam.

One of the interesting features of the meeting was the exhibition of pictures, thrown on a screen, of living birds taken in their haunts, and of nests in situ, from photographs made by Mr. Henry M. Spelman of Cambridge, Mass., and explained by Mr. William Brewster, who spoke of the great difficulty of obtaining successful results in this class of work.

Resolutions were adopted extending the thanks of the Union to the Board of Regents of the Smithsonian Institution for the use of the lecture hall of the National Museum and for other courtesies tendered to the Union during the session of the Eighth Congress; to the Cosmos Club of Washington for courtesies extended to the visiting members; to the Washington members for their generous hospitalities to the visiting members; and to the retiring President, Dr. Allen, for the efficient and impartial manner in which he had presided over the Union during the seven years since its foundation.

It was voted to hold the next Congress at the American Museum of Natural History in New York City, on the third Tuesday in November, 1891.

THIRD SUPPLEMENT TO THE AMERICAN ORNITHOLOGISTS' UNION CHECK-LIST OF NORTH AMERICAN BIRDS.

BY ORDER of the Council of the American Ornithologists' Union the Committee on Publication has prepared the following report on the species, subspecies, and changes of nomenclature proposed during the year ending November, 1890, to be published as the Third Supplement to the American Ornithologists' Union Check-List.

In accordance with the action of the Council, the Committee in cases of the rejection of proposed changes or additions, gives its reasons for considering them inadmissible.

A few cases are necessarily deferred from lack of the requisite data to enable the Committee to reach satisfactory decisions.

The Council having passed a standing order for the preparation

of an annual Supplement to the Check-List, the Committee, in behalf of its successors, begs to call the attention of describers of species and subspecies to the fact that without their coöperation its work will be in large part futile, since, without having the types, or other authentic material representing the new forms before it, the Committee cannot take the responsibility of giving an opinion upon the claims of such forms to recognition. The Committee therefore respectfully requests that describers of new forms of North American birds will kindly transmit to the Committee, for use at its annual session, such types or other material as will facilitate its work.

The present Supplement consists of I, *Additions*; II, *Eliminations*; III, *Changes of Nomenclature*; IV, *Forms considered as not entitled to Recognition*; V, *Proposed changes of Nomenclature rejected*; VI, *Action deferred from lack of material*; VII, *Species entered in the Check-List as Accidental, but now considered as of regular occurrence*.

The number at the left of the scientific name facilitates collation with the Check-List. The interpolated species and subspecies are numbered in accordance with the provisions made therefor in the Code of Nomenclature. (See page 14, last paragraph.)

Committee
on
Publication.

{ D. G. ELLIOT, *Chairman*.
JOHN H. SAGE, *Secretary*.
J. A. ALLEN.
WILLIAM BREWSTER.
ELLIOTT COUES.
H. W. HENSHAW.
ROBERT RIDGWAY.

I. ADDITIONS.

- 256 a. **Totanus solitarius cinnamomeus** BREWSTER.
Western Solitary Sandpiper.

Totanus solitarius cinnamomeus BREWSTER, Auk, VII,
Oct. 1890, 377.

[B 541, *part*, C 435, *part*, R 550, *part*, C 637, *part*.]

HAB. Pacific Coast region, eastward to the Plains.

- 474 h. **Otocoris alpestris adusta** DWIGHT.

Scorched Horned Lark.

Otocoris alpestris adusta DWIGHT, Auk, VII, April, 1890, 148.

[B—, C—, R—, C—.]

HAB. Southern Arizona and New Mexico, Western Texas, and southward into Mexico.

474 i. *Otocoris alpestris merrilli* DWIGHT.

Dusky Horned Lark.

Otocoris alpestris merrilli DWIGHT, Auk, VII, April, 1890, 153.

[B—, C—, R—, C—.]

HAB. Eastern Oregon, Washington, and British Columbia, between the Cascade and Rocky Mountains; southward in winter into Nevada and California.

474 j. *Otocoris alpestris pallida* TOWNSEND.

Sonoran Horned Lark.

Otocoris alpestris pallida TOWNSEND, Proc. U. S. Nat. Mus., XIII, 1890, 138.

[B—, C—, R—, C—.]

HAB. Lower California and Sonora.

514 a. *Coccothraustes vespertinus montanus* (RIDGW.).

Western Evening Grosbeak.

Hesperiphona vespertina var. *montana* RIDGW. in Hist. N. Am. Bds., Land Bds., I, 1874, 449.

Coccothraustes vespertina montana MEARNs, Auk, VII, July, 1890, 246.

[B 303, *part*, C 136, *part*, R 165, *part*, C 189, *part*.]

HAB. Western North America, from the Pacific Coast eastward to the Rocky Mountains; southward over table-land of Mexico.

567 b. *Junco hyemalis shufeldti* COALE.

Shufeldt's Junco.

Junco hyemalis shufeldti COALE, Auk, IV, Oct. 1887, 330.

(Cf. CHAPMAN, Bull. Am. Mus. Nat. Hist., III, No. 1, Oct. 1890, 146.)

[B 352, *part*, C 175, *part*, R 218, *part*, C 263, *part*.]

HAB. Western United States, from the Rocky Mountains to the Sierra Nevada and Cascade Range; in winter eastward to Texas, casually to Illinois, Maryland, etc.

568.1. ***Junco ridgwayi* MEARNS.**

Ridgway's Junco.

Junco ridgwayi MEARNS. Auk, VII, July, 1890, 243.

[B—, C—, R—, C—.]

HAB. Wyoming, Arizona, and New Mexico.

574 b. ***Amphispiza belli cinerea* TOWNSEND.**

Gray Sage Sparrow.

Amphispiza belli cinerea TOWNSEND, Pr. U. S. Nat. Mus. XIII, 1890, 136.

[B—, C—, R—, C—.]

HAB. Lower California.

582 h. ***Melospiza fasciata graminea* TOWNSEND.**

Santa Barbara Song Sparrow.

Melospiza fasciata graminea TOWNSEND, Pr. U. S. Nat. Mus., XIII, 1890, 139.

[B—, C—, R—, C—.]

HAB. Santa Barbara Island, California.

582 i. ***Melospiza fasciata clementæ* TOWNSEND.**

San Clemente Song Sparrow.

Melospiza fasciata clementæ TOWNSEND, Pr. U. S. Nat. Mus., XIII, 1890, 139.

[B—, C—, R—, C—.]

HAB. San Clemente and Santa Rosa Islands, California.

[612.1] ***Petrochelidon fulva* (VIEILL.).**

Cuban Cliff Swallow.

Hirundo fulva VIEILL. Ois. Am. Sept. I, 1807, 62, pl. 30.

Petrochelidon fulva CAB. Mus. Hein. I, 1850, 47.

[B—, C—, R—, C—.]

HAB. Greater Antilles and coast of Central America. Accidental in the Dry Tortugas, Florida. (Cf. SCOTT, Auk, VII, July, 1890, 264.)

GENUS CALLICHELIDON BRYANT.

Callichelidon BRYANT, MS., BAIRD, Rev. Am. Bds. I, 1865, 303. Type, *Hirundo cyaneoviridis* BRYANT.

[615.1] ***Callichelidon cyaneoviridis* BRYANT.**

Bahaman Swallow.

Hirundo cyaneoviridis BRYANT, Pr. Boston Soc. Nat. Hist., VII, 1859, 111.

Callichelidon cyaneoviridis BRYANT, MS., BAIRD, Rev. Am. Birds, I, 1865, 303.

[B—, C—, R—, C—.]

HAB. Bahamas. Accidental in the Dry Tortugas, Florida. (Cf. SCOTT, Auk, VII, July, 1890, 265.)

646 b. ***Helminthophila celata sordida* TOWNSEND.**

Dusky Warbler.

Helminthophila celata sordida TOWNSEND, Pr. U. S. Nat. Mus. XIII, 1890, 139.

[B—, C—, R—, C—.]

HAB. San Clemente, Santa Cruz, and Santa Rosa Islands, California.

727 b. ***Sitta carolinensis atkinsi* SCOTT.**

Florida White-breasted Nuthatch.

Sitta carolinensis atkinsi SCOTT, Auk, VII, April, 1890, 118.

[B 277, part, C 38, part, R 51, part, C 57, part.]

HAB. Florida.

II. ELIMINATIONS.

- 435.
- Trochilus heloisa**
- (LESS. & DELATT.).

Heloise's Hummingbird.

This species was introduced into the North American fauna on the basis of an immature specimen of *Trochilus calliope* Gould, wrongly identified as *T. heloisa*. (Cf. RIDGWAY, Auk, VIII, Jan. 1891, 115.)

III. CHANGES OF NOMENCLATURE.

- 338.
- Buteo harlani**
- (AUD.). This becomes

- 337 d.
- Buteo borealis harlani**
- (AUD.).

(Cf. RIDGWAY, Auk, VII, April, 1890, p. 205.)

- [361.]
- Falco sparverioides**
- VIG. This becomes

Falco dominicensis GM.

Falco dominicensis GM. Syst. Nat. I, 1788, 288.

(Cf. RIDGWAY, Auk, VIII, Jan. 1891, 113.)

4. **Xema (Creagrus) furcata** (NEB.). (Hypothetical List, p. 350.) This becomes **Creagrus furcatus** (NEB.), *Creagrus* being raised to generic rank. (Cf. RIDGWAY, Pr. U. S. Nat. Mus. XII, 1889, 117.) Hence:

GENUS **CREAGRUS** BON.

Creagrus BON. Naumannia, 1854, 211. Type, *Larus furcatus* NEBOUX.

- 4.
- Creagrus furcatus**
- (NEB.).

Larus furcatus NEB. Voy. 'Venus,' Atlas, pl. 10 (1846).

Creagrus furcatus BON. Naumannia, 1854, 213.

IV. FORMS CONSIDERED AS NOT ENTITLED TO RECOGNITION.

Melanerpes formicivorus aculeatus MEARNs, Auk, VII, July, 1890, 249.

Rejected on the ground that the alleged characters are too slight and inconstant.

Otocoris alpestris insularis TOWNSEND, Pr. U. S. Nat. Mus. XIII, 1890, 140.

Rejected on the ground of the insufficiency of the alleged characters.

V. PROPOSED CHANGES OF NOMENCLATURE REJECTED.

407. *Melanerpes formicivorus bairdi* RIDGW., vs. *M. f. melanopogon* TEMM. (Cf. HARGITT, Cat. Bds. Brit. Mus. XVIII, 1890, 151.)

Melanopogon was considered a synonym of *formicivorus* proper.

460. *Contopus pertinax* CAB., vs. *Contopus musicus* (SWAIN.). (Cf. SALVIN and GODMAN, Biol. Centr.-Am. Aves, II, 1889, 81.)

Tyrannula musica SWAIN. was considered indeterminable.

VI. ACTION DEFERRED FROM LACK OF MATERIAL.

Final decision on the following was deferred, owing to absence of material necessary to enable the Committee to pass judgment upon the questions involved.

216 a. *Porzana jamaicensis coturniculus*, BAIRD, vs. *Porzana coturniculus*. (Cf. RIDGWAY, Pr. U.S. Nat. Mus. XIII, 1890, 309-311)

Meleagris gallopavo osceola SCOTT, Auk, VII, Oct. 1890, 376.

Ictinia plumbea (GM.).— Cf. CAHOON, O. & O. XV, March, 1890, 35.

Spinus tristis pallidus MEARNs, Auk, VII, July, 1890, 244.

Vireo vicinior californicus STEPHENS, Auk, VII, April, 1890, 159.

VII. SPECIES ENTERED IN THE CHECK-LIST AS
ACCIDENTAL, BUT NOW CONSIDERED AS
OF REGULAR OCCURRENCE.

[344.] **Buteo brachyurus** VIEILL.—Brackets to be removed, the bird being now known to be a resident species in Florida.

[623.] **Vireo altiloquus barbatulus** (CAB.).—Brackets to be removed, the species being now known as a regular visitor to the Florida Keys, where it breeds.

[737.] **Parus meridionalis** SCL. — Brackets to be removed, its breeding range being now known to include portions of southern Arizona.

RECENT LITERATURE.

Sharpe's Catalogue of the Sturniformes.*—The present volume completes the descriptions of the Acromyodian Passeres. It treats of the Wood-Swallows (Artamidæ), the Starlings (Sturnidæ), the Weaver-birds (Ploceidæ), and the Larks (Alaudidæ), and also the Brush-birds (Atrichiidæ), and Lyre-birds (Menuridæ). These are all Old World groups, the Larks only being represented in the New World by the single genus *Otocoris*. The number of species and subspecies treated is 601, represented by 11,699 specimens, only 58 species, or about ten per cent. of the whole, being unrepresented in the British Museum collection.

Respecting the classification, which brings these families into such unusual juxtaposition, Mr. Sharpe observes: "The classification adopted in the third volume of the present work for the arrangement of the Passeriformes was principally that of Mr. Wallace (*Ibis*, 1874, p. 409), with certain modifications. During the sixteen years which have elapsed since Mr. Wallace propounded his idea of an arrangement of the Passeres, we have learned that the classification adopted in 1877 is somewhat arti-

*Catalogue of the | Passeriformes, | or | Perching Birds, | in the | Collection | of the | British Museum. | — | Sturniformes, | containing the Families | Artamidæ, | Sturnidæ, | Ploceidæ, | Alaudidæ. | Also the families | Atrichiidæ and Menuridæ. | By | R. Bowdler Sharpe. | London: | Printed by order of the Trustees. | Sold by | Longmans & Co., 39 Paternoster Row; | B. Quaritch, 15 Piccadilly; | Asher & Co., 13 Bedford Street, Covent Garden; | Kegan Paul, Trench, Trübner & Co., 57 Ludgate Hill; | and at the | British Museum (Natural History), Cromwell Road, S. W. | :890.—8vo, pp xvi+702, pll. xv. = Catalogue of the Birds in the British Museum, Vol. XIII.

ficial; the characters which were then thought to be of great importance now seem of little worth. Of the three Sections which I have adopted from Mr. Wallace, the one treated of in the present volume seems to be the most unnatural. The Starlings are divorced from the Corvidæ, to which they are undoubtedly allied; the Artamidæ may be a Sturnine family, but of that I am not yet assured; the Alaudidæ find themselves separated from the Motacillidæ, and the Ploceidæ from the Fringillidæ and Icteridæ."

The volume is of course an invaluable hand-book of the groups treated. The method of treatment is similar to that of the other volumes of the series by the same author. 'Subspecies' and 'races' are freely recognized, but in a way to avoid 'trinomials' with, in some cases, the singular result of a form described, say in 1800, being ranked as a subspecies of another form described half a century or more later—an anachronism in nomenclature not by any means new in this series of volumes.

In treating the genus *Otocoris* (or '*Otocorys*,' as Mr. Sharpe naturally prefers to write it) he says of the American forms: "Anything more puzzling than these races of Horned Larks it has never been my lot to describe. The differences between *O. alpestris* and *O. rubea* are as well marked as could be wished, but between these two extreme forms are interposed a number of races which seem absolutely to connect them [!], and both of these American authors [Messrs. Henshaw and Ridgway] admit that these connecting links actually exist [!]. To write all of the races under the heading *O. alpestris* would be to obscure the existence of several highly interesting geographical forms, and I have therefore thought it best to recognize the races determined by Mr. Henshaw and confirmed by Mr. Ridgway, with certain notes of my own upon the series now lying before me." (These include the specimens in the Henshaw collection.) Mr. Dwight's paper on the same group was published too late for consideration in the body of the volume, but it is mentioned in the 'Addenda,' and the three additional races proposed by Mr. Dwight after an examination of more than six times the material (2012 specimens) studied by Mr. Henshaw, are accepted, but not "*more Americano*," under trinomials, but of course after the stereotyped method of Mr. Sharpe.

After stating that he quite agrees with Mr. Henshaw "that the large Horned Lark of Europe cannot be separated from that of North America," his study of the British Museum series of American Horned Larks appears to have led him to separate the American forms into two specific groups, as follows: 1. *O. leucolæma*, with 'subsp.' *α. praticola*, and *β. arenicola*; 2. *O. alpestris*, with 'subsp.' *α. chrysolæma*, *β. peregrina* (U. S. Colombia), *γ. rubea*, *δ. giraudi*, *ε. strigata*. On just what grounds this division is made Mr. Sharpe fails to state; to American eyes they are certainly inscrutable: for a more arbitrary arrangement would be hard to devise. Geographically his subspecies of *alpestris* are separated from *alpestris* proper by the intervention of his whole *leucolæma* group, his first subspecies of *alpestris* (*alpestris* is limited in the breeding season to Labrador and the Hudson Bay region) being *chrysolæma*,

of Southern California and Mexico. On either geographical or other grounds the case is scarcely better for the other subspecies of his *alpestris* group.

In the present volume, as in previous volumes of this series, Mr. Sharpe displays his usual independence of the strict law of priority, the case of *Ploceus baya* (p. 488) being an illustration in point, where an Indian Weaver-bird was named by Linnæus *Loxia philippina* and the species known for a long period as *Ploceus philippinus*. Later (1844) it was called *Ploceus baya* by Blyth, this latter name being also in common use for a long period for an allied species, to which of late it has been restricted. But as no Weaver-bird has ever come from the Philippines, the name *philippinus* is discarded for *baya*, and an older name than *baya* is properly revived for the species commonly known as *baya*.

In the course of the volume no less than 31 new names are proposed for species and subspecies (all of course, *more Brittanico*, binomial in form), and 11 new generic names are introduced, the latter being as follows: 1. *Spodiopsar* = *Poliopsar* Sharpe, preoccupied; 2, *Chalcopsar* = *Megalopterus* Smith, preoccupied; 3, *Hagiopsar*, type *Amydrus tristrami* Scl.; 4, *Heteropsar*, type *Lamprocolius acuticaudus* Boc.; 5, *Penthetriopsis*, type *Loxia macroura* Gm.; 6, *Stictospiza*, type *Fringilla formosa* Lath.; 7, *Granatina*, type *Fringilla granatina* Linn.; 8, *Heterhyphantes*, type *Malimbus nigricollis* Vieill.; 9, *Nesacanthus*, type *Foudia eminentissima* Bon.; 10, *Chersophilus*, type *Alauda duponti* Vieill.; 11, *Heliocorys*, type *Galerita modesta* Heugl.—J. A. A.

Hargitt's Catalogue of the Woodpeckers.*—The well circumscribed family of the Woodpeckers comprises, according to Mr. Hargitt, 50 genera and 385 species and subspecies, represented in the British Museum by 7894 specimens. "As a rule," says Mr. Hargitt, "the species of the Picidæ are very clearly defined, but in *Dendrocopus* [= *Dryobates*], *Picoides*, and *Colaptes* there is a decided tendency to subdivide into races." Only in the case of the North American *Colaptes* does "there seem to be any definite appearance of hybridization." This leads him to the consideration of the question of what constitutes a species, and he accepts as the test non-intergradation with allied forms; "where intergradation takes place the allied form is a subspecies or race." On the question of insular forms he says, "Island forms may or may not possess some slight differences from typical birds, but not sufficient to separate them; yet some authors take it for granted that with insular separation there can be no intergradation: therefore we find insignificant islands made to father a host of indifferent species or subspecies; but I fail to see

* Catalogue of the Picariæ in the Collection of the British Museum. | — | Scansores, | containing the Family Picidæ. | By | Edward Hargitt. | London: | Printed by order of the Trustees. | Sold by | Longmans & Co., 39 Paternoster Row; | [etc.] | 1890. 8vo. pp. xvi+598, pll. xv. = Catalogue of the Birds in the British Museum, Vol. XVIII.

(if perfect intergradation be insisted on in determining the position of a bird as a subspecies) how island forms can be reduced to this rank. . . . Some island forms, although they may certainly differ slightly from typical birds, have differences so suggestive of climatic variation only and not of specific value, that I take them upon their own merits and assign them a position accordingly."

The case of *Colaptes auratus* and *C. mexicanus* [=cafer] is discussed at some length, with a decided leaning to the theory of hybridization as an explanation of the mixed character of the specimens formerly recognized under the name *Colaptes hybridus*. He also makes some suggestive allusions respecting the evolution of the North American forms of *Colaptes*.

In matters of nomenclature we regret to see that Mr. Hargitt is a purist, and by no means a strict adherent of the law of priority. Generic names formed so nearly in accordance with their etymology as to be readily susceptible of emendation are accepted in an emended form, while those of barbarous or hybrid origin are rejected, without regard to the currency they may have obtained. In respect to specific names, those not pleasing to the author, through faulty significance or construction, are thrown over, regardless of previous currency.

While only one new species is apparently named in the present volume (*Sasia everetti* p. 559, pl. xv), we find the following new generic names: 1, *Sapheopipo*, type *Picus noguchii* Seeb.; 2, *Cercomorphus*, type *Picus flavus* Müll.; 3, *Microstictus*, = *Lichtensteinipicus* Bon., rejected; 4, *Nesocites*, type *Picumnus micromegas* Sundev.

The following points will be of interest to readers of 'The Auk,' from their bearing on North American birds, and as an indication of the author's methods. In respect to *Colaptes*, the specific name *mexicanus* of Swainson, 1827, is of course adopted in place of *cafer* Gmelin, 1788. Under *mexicanus* are synonymized both *ruficapileus* Ridgw. and *saturator* Ridgw., the former recognized as a species and the latter as a subspecies in the A. O. U. Check-List. Mr. Hargitt says: "The varied forms of *C. mexicanus* appear to be the result of climatic influence [!], as they are not confined to any particular geographical area [*sic*]. An examination of a large series of specimens convinces one that they cannot well be separated." He cites birds from Vancouver and Nevada that resemble others from Mexico. Has it occurred to him that the North American forms of *Colaptes* are migratory birds, that the particular examples mentioned from Mexico are either winter specimens or without record of capture, and that distribution in the breeding season is one of the most important elements of the problem?

The mixed assemblage presenting all sorts of combinations of the characters of *C. auratus* and *C. cafer*, which Baird proposed to call *C. hybridus*, is here treated as a *species*, under the name "*Colaptes ayresi*" of Audubon! His reasoning on this point is as follows: "The very existence of this race, occupying as it does a distinct region, seems to point to the conclusion that the birds are fertile, otherwise it would cease to exist,

and hybrids would only be found where the opposite species came in direct contact. . . . The breed may be one of long standing, but that it is replenished by pure blood from without seems highly probable, and may account for the violent contrast sometimes produced in the two sides of the same bird, which I think would not result in a race if left entirely to themselves, as the tendency would be towards the acquirement of a fixed character. The name given by this author [Audubon] must therefore be understood to apply to the race produced originally by the union of *C. auratus* and *C. mexicanus*, and possessing such varied characters as to render description vague and indefinite, but evidently suggestive of very close interbreeding, and not as tending to show that all the individuals comprising the race are the immediate descendants of true *C. auratus* and *C. mexicanus*. There can be no doubt that *C. auratus* also interbreeds with *C. chrysoides*, [and the same may be said of *C. mexicanus*] but I do not see how any specific title can be applied to these hybrids, which occupy no distinct region." While this is a pretty fair statement of the facts and conditions of the case, the method of treatment seems hardly consistent with the author's avowed tenets, above quoted.

The Mexican form, commonly known as *C. mexicanoides* Lafr. (1844), is called *submexicanus* Sundev. (1866), for the only reason apparently that the latter in some way seems to him to be a better name, thus supplanting a name hitherto in almost universal use by a much later name used previously but once!

Under *Melanerpes*, *M. formicivorus bairdi* is considered as a synonym of *Picus melanopogon* Temm., the form standing as "Subsp. a. *Melanerpes melanopogon*." It is evident, however, that *melanopogon* is a pure synonym of *formicivorus* Swain., as well from the original description and figure as from the locality of the type.

Dendrocopos Koch (type *Picus major* L.) replaces *Dryobates* Boie (type *Picus pubescens*). This point was well considered by the A. O. U. Committee, and *Dendrocopos* Koch was found to be apparently slightly antedated by *Dendrocopos* Vieill., though both names were published the same year. In any case *Dryobates* has a clear title, while *Dendrocopos* has not. Under *Dendrocopos*, *Dryobates hyloscopus* Cab. & Heine is synonymized with *D. villosus harrisi*, with no reference to the recent revival of *hyloscopus* to subspecific rank by American writers. *Dryobates villosus maynardi*, a Bahaman form, is recorded from Florida (Addenda, p. 570), on the basis of two females collected at Tarpon Springs, by Mr. W. E. D. Scott, and recorded by him (Auk, VI, p. 251) as *Dryobates villosus auduboni*. This latter form is synonymized by Mr. Hargitt with *D. villosus*! *D. pubescens oreæcus* Batchelder is synonymized under *D. p. gairdneri*, with the remark, in a footnote, "In my opinion barely worthy of subspecific rank"; but it is not so treated.

Picoides dorsalis is accorded full specific rank—explainable probably on the ground of the smallness of Mr. Hargitt's series, the evidence of which is preferred to the consensus of American opinion, based on adequate material.

Mr. Hargitt's treatment of our Pileated Woodpecker presents a curious and lamentable case. He removes it from the genus *Ceophlæus* (the propriety of which we leave as merely a question of opinion) and places it under *Dryotomus* of Swainson (1831), of which he considers *Hylatomus* of Baird (1858) as a pure synonym, giving the *same species as the type of each*, namely, *Picus pileatus* Linn. Although Swainson placed *P. pileatus* under his genus *Dryotomus*, he expressly gives as its "Typical species," *Picus martius* (Fauna Bor.-Am., II, p. 301), thus making his *Dryotomus* a pure synonym of the genus *Picus*, as of late restricted, leaving *Hylatomus* Baird available for *Picus pileatus*, for those who wish to separate it from *Ceophlæus*. Furthermore, *Picus pileatus* appears to have been placed under *Dryotomus* by only two authors, Swainson and Bonaparte, and by no one since 1838, till Mr. Hargitt came on the scene, while it was almost universally recognized as *Hylatomus pileatus* from 1858 to 1886! Swainson simply treated *Picus pileatus* and *P. martius* as congeneric species under his genus *Dryotomus*, expressly naming *Picus martius* as the type! In reviewing works so indispensable and of such inestimable value to the ornithologist as are the volumes of the British Museum 'Catalogue of Birds,' it is painful to find one's self confronted with misleading statements on points of vital importance in nomenclature, of which the above is unfortunately by no means an isolated case. —J. A. A.

Merriam's 'Results of a Biological Survey of the San Francisco Mountain Region and Desert of the Little Colorado, Arizona.'—In 'North American Fauna, No. 3,'* Dr. C. Hart Merriam, Chief of the Division of Ornithology and Mammalogy, U. S. Department of Agriculture, gives an account of results of a biological survey of the San Francisco Mountain region in Arizona made by him, with a small corps of assistants, during August and September, 1889. The area surveyed carefully comprised about 5,000 square miles, while 7,000 more were roughly examined, and a biological map prepared of the whole. In addition to Mr. Vernon Bailey, Dr. Merriam had with him in the field Prof. F. H. Knowlton, assistant paleontologist, U. S. Geological Survey, and Dr. Leonhard Stejneger, curator of reptiles in the U. S. National Museum. The report consists of (1) General Results, with special reference to the geographical and vertical distribution of species. (2) Grand Cañon of the Colorado. (3) Annotated List of Mammals with descriptions of new species. (4) Annotated List of Birds. (5) Annotated List of Reptiles and Batrachians, with descriptions of new species. The last is by Dr. Stejneger, the others by Dr. Merriam, who also has an illustrated paper on 'Forest Trees of the San Francisco Mountain Region, Arizona,' and another on

*North American Fauna, No. 3. Published by authority of the Secretary of Agriculture. 8vo. pp. viii+136, with a frontispiece, 13 plates, and 5 maps. Published Sept. 11, 1890.

'Relation of a Biological Survey to Agriculture.' The strictly ornithological portions are: 'List of Birds noted at the Grand Cañon of the Colorado, Arizona, September 10 to 15, 1889' (pp. 38-41), embracing 57 species; and an 'Annotated List of Birds of the San Francisco Mountain Plateau and the Desert of the Little Colorado River, Arizona' (pp. 87-101), comprising 150 species.

The work here under review is unique in its conception and methods, and of far-reaching importance in its results. Besides the discovery of many new species of mammals, and several new species of reptiles and plants, a systematic and detailed survey was made of the life zones of an isolated mountain peak, rising from the edge of an arid desert—a plateau region 7,000 feet above the sea—to an altitude of nearly 13,000 feet. In ascending "from the hot and arid desert of the Little Colorado to the cold and humid summit of the mountain no less than seven zones are encountered, each of which may be characterized by the possession of forms of life not found in the others." Each is discussed in detail, its characteristic animals and plants enumerated, and its relation to other faunal areas considered. Beginning at the summit is an 'Alpine Zone' (extending down to 11,500 feet), characterized by the prevalence of Arctic plants and a few Arctic animals, many of them circumpolar, not found at ordinary levels south of the tundras and barren grounds, and at intervening points only on the tops of the highest mountains. Below this is a 'Sub-Alpine or Timber-line Zone' (between 11,500 and 10,500 feet), likewise characterized by boreal forms of life, which, however, range much further south than the species characterizing the Alpine Zone. Below this is the 'Hudsonian or Spruce Zone,' corresponding to the so-called Hudsonian Fauna of boreal North America (northern New England to Labrador). Below this, in descending order, are the 'Canadian or Balsam Zone'; the 'Neutral or Pine Zone'; the 'Piñon Zone'; and the 'Desert Zone.' These are strikingly illustrated in a colored 'diagrammatic profile,' forming plate I of the accompanying illustrations.

From the study of the life zones of San Francisco Mountain, the author passes to 'Generalizations concerning the Distribution of Life in North America.' As recognized more or less vaguely by previous writers, the present life of the North American continent is derived primarily from two sources, a northern and a southern, the former circumpolar, the latter tropical. The extratropical portion of North America is divided into two primary life regions, a "Boreal" and a "Sonoran or Mexican table-land" region. On Dr. Merriam's 'Provisional Biological Map of North America showing the principal Life Areas' (Map 5), there are: (1) An Arctic division, limited at the southward by the beginning of forest vegetation. (2) A Boreal Province, extending obliquely across the continent from New England and Newfoundland to Alaska, with prolongations southward along the principal mountain ranges. This nearly coincides with what has been sometimes termed the Cold Temperate Region. (3) A Sonoran Province, occupying the region intervening between the

Boreal and the Tropical Provinces, and corresponding to the Warm Temperate Region of some authors. (4) The Tropical Province, extending into North America from the south, and embracing Central America and the Antilles, the lowlands of Mexico, and a narrow coast belt of southern Florida.

For many years that portion of North America situated mainly within the United States has been divided into a so-called Eastern Province, a Middle Province, and a Western Province. While these 'Provinces' (established by Baird in 1866) have been hitherto generally accepted, they have been unsatisfactory and troublesome, but have escaped searching analysis till taken in hand by Dr. Merriam in the present paper. Following the clue furnished by the evident fact that the life of middle North America is made up of increments from both the north and the south, and that the boreal element extends far to the southward at the higher elevations, while the life from the south occupies the intervening lowlands, resulting in the interdigitation of areas stocked respectively with northern and southern types, it became clear that these long recognized Provinces were untenable, in so far at least as any basis for the so-called 'Middle' or 'Central' Province is concerned. This Central Province was made up of the Rocky Mountain region, the Great Plains to the eastward, and the Great Basin to the westward. The Rocky Mountain region evidently derived its life from the north, and is essentially a part of the 'Boreal' or Cold Temperate life-region. The life of the Great Plains and the Great Basin is as obviously derived mainly from the south, with an intermixture of more or less modified northern elements. With this key to the problem Dr. Merriam has separated his Sonoran Province (which is made to include the whole breadth of the continent) into six 'sub-regions,' as follows: (1) an Arid or Sonoran sub-region, occupying the table-land of Mexico, western Texas, portions of New Mexico, Arizona, and southern California; (2) a Californian sub-region, occupying the greater part of California; (3) a Lower Californian sub-region; (4) a Great Basin sub-region, embracing the area between the Rocky Mountains and the Sierra Nevada, north to the Plains of the Columbia; (5) a Great Plains sub-region, extending from Northern Texas to the Plains of the Saskatchewan; (6) a Louisianian or Austroriparian sub-region, occupying the eastern United States from the southern border of the Alleghanian Fauna, as commonly recognized, southward to the Gulf coast, and thus equivalent to the Carolinian and Louisianian Faunas, as usually limited by ornithologists. These regions are all shown in colors on Map 5, but the distinguishing elements of each are not stated. They seem, however, fairly tenable, though set forth as merely provisional, and presumably open to some modification. Even the terms to designate the relative rank of the various subdivisions are used tentatively, the whole scheme of nomenclature requiring careful attention, since nearly every term employed for the designation of the different grades of life areas has been used differently by different authors. The matter

sadly needs rigorous sifting, and placing on a basis comparable with the terms used for groups in zoölogy, and in geological terminology.*

Some twenty years since North America east of the Great Plains was subdivided, on the basis of bird life, into a series of minor areas termed faunas, eight in number, including the whole Atlantic coast region, from the southern extremity of Florida to the Arctic coast. At that time our knowledge of the North America fauna at large was too imperfect to permit the extension of similar generalizations to other parts. Although our knowledge of the middle and western portions of the continent has since greatly increased, it is still insufficient for final work in respect to the minor faunal areas, coördinate in rank with the 'faunas' recognized for the Atlantic coast region. In Dr. Merriam's 'Map of Arizona showing the Life Areas of the Colorado Plateau south of the Grand Cañon' (Map 1), and in his maps 2, 3, and 4 of 'San Francisco Mountain and Vicinity,' devoted to the distribution of various species of forest trees, a model is set which may well be emulated in the prosecution of similar work. Investigation of large areas on this minute scale, however, is beyond the means of individual workers; on this account, and from its high economic importance, it is a proper undertaking for a Bureau of the Government; and it is most gratifying that the appropriations for such work—this year fortunately much increased—are sure to be so wisely and economically expended. The present report is an emphatic illustration of the practicability, the scientific interest, and the economic importance of a careful biologic survey of our vast territory.

The publication of these results will doubtless incite other investigators to activity, and it is hence important that certain questions of nomenclature should be speedily settled. At the last Congress of the A. O. U., Dr. Merriam presented in abstract an extended paper on 'The Primary Faunal Regions of North America,' illustrated by colored maps on a uniform scale, showing comparatively the results of all previous work on the subject, and presenting a bibliographical and historic *résumé* of each contribution to the general subject of North American life areas, including the work of botanists as well as zoölogists. Such a summary should present a basis for a consistent scheme of terminology and nomenclature, based as far as possible on the rule of priority. The terms 'fauna,' 'area,' 'region,' etc., are used commonly in a general or non-technical sense, but often also technically, to designate a definite grade in the scale of subdivisions. In like manner "transitional area," or "transitional region," is of necessity used in a general and non-technical sense, but is reprehensible when used in a specific sense, as has been sometimes the case; since any region lying between two others, is, in the very nature of things, more or less transitional in character; hence the term is better reserved for the designation of a condition rather than for the indication, in the sense of a nomenclatural term, of any geographic area.—J. A. A.

* Cf. Allen, Bull. Mus. Comp. Zoölogy, Vol. III, No. 2, 1871, pp. 378, 379.

Seebohm's Birds of the Japanese Empire.*—As a fitting conclusion to his numerous and valuable contributions to Japanese ornithology Mr. Seebohm has issued a handsome volume which intends to be a representation of the present status of the avifauna of Japan. His first labor in this field commenced eleven years ago with a paper entitled 'Remarks on Messrs. Blakiston and Pryer's Catalogue of the Birds of Japan' (Ibis, 1879, pp. 18-43), and the book before us may—in some respects at least—be regarded as a further elaboration of that same 'Catalogue' which started a new era in Japanese ornithology. This being the case, it is highly to be regretted that Mr. Seebohm has not found it necessary to refer to the numbering and nomenclature of Blakiston and Pryer's catalogue in each special case, the more so since he has deemed a synonymy of the species entirely superfluous. The omission is particularly unfortunate, for it will be remembered that Mr. Seebohm's rules of nomenclature, as well as their enforcement and application, are entirely his own, and quite unique. I shall only mention a few examples. Mr. Seebohm is, I believe, the inventor of the now famous '*auctorum plurimorum*' principle which was intended to strike terror to the hearts of those authors who believe in an inflexible law of priority. But like most lawmakers, Mr. Seebohm does not feel himself bound by his own laws. If he can discover ("rake up" is his own expression, Br. B. Eggs, I, p. xix) an old and musty name, then the '*auctorum plurimorum*' appellation is flung to the winds, and forgotten is the proud announcement: "It is not necessary for me to encumber my nomenclature with a third name, either to denote the species to which it refers, or to flatter the vanity of the author who described it." We have once before called attention to this with regard to *Diomedea albatrus*, and we are again forcibly reminded of it by finding the Sacred Crane of Japan called *Grus japonensis*. Fancy Mr. Seebohm "raking up" one of Philip Statius Müller's names! But Mr. Seebohm is nothing, if not inconsistent. In 1883-1885 he published a most delightful 'History of British Birds' in three volumes. In this he gives a very elaborate and, in most cases, very accurate synonymy of every English bird, even the most common ones. Looking over the English ornithological literature one is almost tempted to regard such a proceeding as equivalent to carrying coals to Newcastle. Five years later, when treating of the comparatively unknown birds of Japan, presumably for the benefit of readers who have but little opportunity to settle the questions of synonymy for themselves, he finds these lists "useless." How is the ornithological student in Japan, who has no other book of reference than Seebohm's, to locate such names as *Cuculus telephonus*, *Corvus orientalis*, *Dryobates leucotos*, *Columba intermedia*, *Turtur douraca torquatus*, etc., etc., which occur in other publications on Japanese ornithology? These synonymical lists would certainly be much more useful in a work on the 'Birds of the Japanese Empire,' than the large woodcuts and descriptions of the deep

*The Birds of the Japanese Empire | By | Henry Seebohm | London: R. H. Porter. | 1890. 8vo., pp. xxiv+386, with map and figures in the text.

plantar arrangement of the tendons, the shape of the sternum, the osteology of the feet, etc., of such birds as do not come within 5000 miles of Japan! By leaving out all this extraneous matter, and by adopting the same typography as in the 'History of British Birds,' enough space could have been obtained for exhaustive synonymies and full descriptions.

In regard to descriptions it may be stated that while there is one accompanying each species, it is in many, if not in most cases, insufficient. Usually it only refers to the adult bird, while in some instances it is hardly more than a pretense. What is thought of a specific description of "*Sitta cæsia*" (one is obliged to quote some of Mr. Seebohm's names in this way) consisting of the following words only: "The Nuthatch has the bill of a Woodpecker with the tail of the Tit"!

For those who know the birds which Mr. Seebohm treats of and the names he gives them the present volume is useful, because it gives a nearly complete list of all the birds hitherto recorded as inhabiting Japan, with most of the published information as to their occurrence and their habits, collected in one place. But it would have been more useful still, if it had had been more complete in both respects. Another reviewer has pointed out some of these omissions ('Nature' for Oct. 30, 1890), but the most obvious one has not yet been mentioned, for the celebrated *Pitta nympha* of the 'Fauna Japonica,' which our own Jouy re-discovered, is entirely left out!

On p. 32 *Bubo blakistoni* is given as peculiar to Japan, particularly Yezo, though it has been recorded from the mainland by Taczanowski.

On p. 33 *Picus major japonicus* is said to be confined to the three main islands. This statement is wrong, for I do not believe there is a single instance on record of this species having been found in Kiusiu; I am pretty certain that it does not even occur in the southern part of Hondo beyond the line Owari-Tsuruga.

On p. 309 the breeding range of *Charadrius mongolicus* is stated to extend to the valley of the Amoor, although I have long ago shown it to breed as far east and north as the Commander Islands, Kamtschatka. This reminds me of the fact that in 1887, in his great monograph of the Charadriidæ (p. 148), Mr. Seebohm states that the eggs of this species are "unknown," he having overlooked entirely that two years previously I described a fully authenticated set collected by myself and now in the collection of the U. S. National Museum.

I could go on with similar remarks, but as a reviewer's space is limited, and as I shall undoubtedly in the future have occasion to discuss these and many other points in Mr. Seebohm's book I shall only briefly call attention to the following, because they concern a group which I have already treated of in detail before.

The present writer in the 'Proceedings' of the U. S. National Museum for 1887 (Vol. X, pp. 416-429) published a 'Review' of the Japanese Pigeons, in which he treated of considerable new material and corrected several grave errors of previous authors. It is very discouraging to find that one has labored in vain. Some of the things in that paper Mr. Seebohm has seen—though in his peculiar manner, others he has entirely overlooked. Of *Fanthenas nitens* he says that it was made a new species

"on the ground that the head is brown instead of gray," and adds: "the difference is doubtless due to abrasion." It was doubtless nothing of the kind. The specimen was not at all in abraded plumage as will also be perfectly clear from my original description which says: "Entire head and throat of a dull cinnamon-chocolate, glossed with lilac on crown and occiput." Has anybody ever seen a slate colored ground color change to cinnamon-chocolate glossed with lilac by any sort of abrasion?

In that same paper I demonstrated beyond the remotest doubt, that *Turtur risorius* belongs to an entirely different subgenus from that which embraces the wild Japanese Ringed Turtle-dove, and, moreover, that the Barbary Turtle-dove, the true *T. risorius*, is also found tame in Japan. Yet, without a word of comment, Mr. Seebohm perpetuates the old and now "unpardonable blunder" (to use a Seebohmian expression).

Finally, all that Mr. Seebohm knows of the occurrence of *Turtur humilis* in Japan is limited to the example obtained by Mr. Owston from a dealer at Yokohama, in spite of the fact that on pp. 428-429 (*tom. cit.*) I gave an elaborate description of a specimen from Nagasaki.

Before concluding I should like to say a few words of the figures. Besides the exquisite woodcuts reprinted from his monograph of the Charadriidæ, we find a number of more or less crude drawings of heads. If the enormous beaks of "*Fratercula*" *pygmæa* and *pusilla* correctly represent Japanese specimens, we have certainly to do with species differing from those occurring in Kamtschatka and Alaska, but that is highly improbable. The Shags of the species "*pelagicus*" and "*bicristatus*" seem to be as much of a stumbling block as ever, in spite of all the reviewer has written and painted about them. The head on p. 210 does certainly not represent a *pelagicus*, and is probably a young *bicristatus*. The head on p. 211 looks much more like a different species than a *bicristatus*, and unless the drawing is very inaccurate the specimen from which it is taken is something else.

In reviewing this work I have felt keenly that fault-finding comes with but little grace from one who works in the same special field as the author whose work he criticizes. But, on the other hand, he is expected to speak, because he is supposed to know something about it, and it then becomes necessary to show neither fear nor favor. Mr. Seebohm himself has never handled his colleagues with gloves, and he himself would be the first one to resent any attempt at establishing a mutual admiration society.—L. STEJNEGER.

Warren's Revised Report on the Birds of Pennsylvania.*—The great demand which arose for this 'Report' immediately upon the publication of the first edition in 1888, led the Legislature to order an enlarged and

* Report | on the | Birds of Pennsylvania. | With Special Reference to the Food-Habits, based on over Four | Thousand Stomach Examinations. | By | B. H. Warren, M. D., | Ornithologist, Pennsylvania State Board of Agriculture. | Second Edition, Revised and Augmented. | Illustrated by One Hundred Plates. | — | Published by Authority of the Commonwealth. | — | Harrisburg: | E. K. Meyers, State Printer | 1890.—8vo. pp. xiv, 434, pll. 100.

revised edition; upon the preparation of this Dr. Warren has been engaged during the past two years, and the present volume is the result.

The primary purpose of the Report is not to lay before the scientific public the outcome of the author's investigations, though a great deal of important original matter is actually given; its object is simply to instruct the people of Pennsylvania in regard to the birds of their State, and especially to give the farmers all available information as to the bearing upon their own interests of the food habits of the various species. In a way the book seems intended to fill a place today in Pennsylvania very similar to that so long occupied in Massachusetts by Samuels' 'Birds of New England'; and it is amply qualified to do so.

The book begins with a brief introduction which includes a geographical description of the State of Pennsylvania and a list of the anatomical terms used in the descriptions of species, the latter illustrated by a plate to make the subject clear to the inexperienced. After this comes the body of the work, occupying 331 pages, in which 298 species are treated. Each family or subfamily is introduced by a concise and well-planned account of its habits, nesting, and distribution, and its distinctive physical characters. Under each species is given a description, expressed in unusually simple language, brief, yet generally sufficient to identify the bird. "The greater portion of the descriptions . . . are original, having been taken principally from specimens in the author's collection," but in some cases lack of material has made it necessary to quote from Baird, Coues, or Ridgway. Following the description comes a statement of habitat, copied, occasionally with slight changes, from the A. O. U. Check-List. The rest of the text treats of the times of occurrence, the abundance, and local distribution, of the bird in Pennsylvania, and, often in considerable detail, of its habits, nesting, and food. These accounts are based upon "field observations made by the writer, during the past ten or twelve years, in the State of Pennsylvania." When these prove insufficient the gaps are filled by extracts from the writings of Audubon, Nuttall, Coues, and various others. In the case of many of the less common species the author has incorporated the previously unpublished notes of a number of observers in different parts of Pennsylvania. In some cases their reports are given in tabulated form, showing very satisfactorily the evidence as to abundance and seasons of occurrence throughout the State.

While these accounts are on the whole eminently satisfactory, and adapted with great discretion to the purpose of the Report, there is one fault which cannot be overlooked,—at least by the scientific ornithologist. Occasionally rarities are recorded with but the barest mention of the circumstances; giving rise unavoidably to painful doubts in the reader's mind as to the correctness of the record. A case in point is *Dendroica kirtlandi*, which is given as breeding, on the strength of the statement by a correspondent that he "saw one and its family." Apparently none of the "family" were secured, and the author seems content to remain in ignorance as to whether or not even the parent bird was taken. For-

tunately cases like this are few, but they incline one to caution in accepting some other interesting statements made by his correspondents in regard to matters that have not come under Dr. Warren's own observation. If some of these records are not of sufficient interest to the general reader to be given more space in the book itself, their full details, if substantiated, should at least be published elsewhere; and if not fully sustained, there is no excuse for their appearance in print at all.

The book ends with an appendix of 92 pages, which includes an account of the Pennsylvania 'Scalp Act'; extracts from reports of the U. S. Department of Agriculture (54 pages) upon "Food of Hawks and Owls," "The Food of Crows," and "The English Sparrow"; a tabulated report of birds that struck a light-house at Atlantic City, N. J., in the autumn of 1889; a list of publications quoted in the Report, and of observers who contributed to it; and a glossary of technical terms.

One feature, invaluable in a work of popular instruction in such a subject, is the unusual abundance of colored plates which, happily, legislative authority has bestowed with an enlightened liberality. These number altogether 99, and on them are shown 160 species, often two or three different plumages of one species being exhibited. By the terms of the legislative 'order to print' the lithographer was restricted in the number of colors to be used, but in spite of this he has succeeded in producing plates that in almost every instance will be of the utmost usefulness in aiding the learner to identify the birds he meets. In a few cases, *e. g.*, some of the Thrushes and Sparrows, the close similarity in coloring of the species has proved too much for the artist's abilities,—or for the means at his command,—and we fear that the seeker after knowledge will get but little aid from them. Most of the figures are of course reduced in size, and unfortunately the proportion between the actual sizes of different species represented on the same plate has sometimes been overlooked, with results that may now and then prove confusing to a careless reader. Another point that is open to criticism is the order, or lack of order, in which the plates are arranged,—utterly without regard to the sequence of the species in the text. Sea Birds face the text that treats of Woodpeckers, Warblers appear opposite the accounts of Birds of Prey, and Wrens and Waders are seen where Sparrows and Finches would be looked for.

Yet if the book be considered as a whole, its few faults are chiefly such as are objectionable from the standpoint of the scientific ornithologist, and detract little from its value as a hand-book for the people; whereas if we look in the other scale we see a book, well proportioned, readable, full of just the information that the public needs, one that can hardly fail to mark an era in the popular knowledge of ornithology, at least in this much favored State. The author is to be congratulated upon having accomplished a work of such far-reaching usefulness, and we hope that the Legislature of Pennsylvania may see fit to complete its good work by enlarging the edition of the Report to such a degree as to bring it within the reach of all who are interested in the subject.—C. F. B.

Belding's Land Birds of the Pacific District.*—In this book, prepared originally as a report to the Department of Agriculture upon the distribution and migrations of the birds of the Pacific Coast, Mr. Belding has brought together his own field notes and those contributed by a number of other observers, and has added to them brief extracts from the literature relating to the region. In arranging this material under the heads of the species, each contributor's quota is given by itself in a short paragraph headed by the locality and authority, and usually in the writer's own words. Of course with such a system the literary result is often fragmentary and disjointed, but in a work of reference this is sometimes better than to give—as writers are too often tempted to do—a smooth generalization beneath which it is impossible to distinguish the isolated facts supporting it from the well-concealed gaps between them.

Of course the accounts of most of the species are by no means complete. This was indeed unavoidable in treating a region one fourth as large as the United States, where observers have been so few and observations have been seldom carried on continuously for any considerable length of time. In spite of these drawbacks Mr. Belding has succeeded in gathering a large amount of valuable material which will make his book an indispensable one. It is to be regretted though that he did not have the assistance of all the observers within the limits of his district and that he did not compile all the reliable published records.

Furthermore we are occasionally inclined to deplore his liberality in admitting to the list some species of whose occurrence in the area under consideration little or no evidence is adduced.

But on the whole, although the book may not be faultless, it is one that cannot fail to be of much service to all students of Pacific Coast birds.—C. F. B.

A Catalogue of the Birds of New Jersey.†—After an interval of twenty-two years the Geological Survey of New Jersey again presents a Catalogue of the birds of the State. It might fairly be presumed that the advance made in the study of ornithology during this period would, in a measure, be apparent in the list before us, but when we find that to the numerous errors of Dr. Abbott's list, there have been added others of equally unpardonable, if not now so glaring, a nature, it becomes obvious that science will not be benefitted by this recent production.

*Occasional Papers | of the | California | Academy of Sciences. | II. | — | Land Birds | of the | Pacific District | by | Lyman Belding. | San Francisco: | California Academy of Sciences, | September, 1890. 8vo., pp. [iv.] 274.

† Geological Survey of New Jersey. | — | Final Report | of the | State Geologist. | — | Vol. II. | — | Mineralogy. | Botany. | Zoology. | — | Trenton, N. J. | Printed by the John L. Murphy Publishing Company. | — | 1890. | Descriptive Catalogue | of the Vertebrates of New Jersey, | (a revision of Dr. Abbott's Catalogue of 1868). | Prepared by Julius Nelson, Ph. D.

The author wisely follows "Ridgway's 'Manual of North American Birds' . . . in the nomenclature of the families and smaller groups,' but adopts an original system of classification. The "Scansores" head the list, which then follows the 'Manual' to *Sialia*; this genus is succeeded by the Raptores and the 'Manual' is again followed with the families in inverse order; the Podicipidæ and Alcida, however, are transposed and the Catalogue concludes with *Alle*. Trimomials are preceded by the abbreviation 'var.' or are hyphenized with the specific name, while brief descriptions, based largely on Ridgway's diagnoses, are given of each species and subspecies. In quotation from Dr. Abbott's list *Passerella iliaca*, *Seiurus noveboracensis*, *Troglodytes hiemalis*, *Regulus satrapa*, *R. calendula*, etc., are given as *summer* residents, while apparently on his own authority the author gives numerous records which, if they can be substantiated, will add considerably to our knowledge of the birds they refer to. *Contopus borealis* is cited as "A northern form ranging as far south as New York, and should be looked for in our northern Counties," where also "hunters" are warned to look out for additional specimens of *Acanthis brewsteri*. *Dendroica kirtlandi* is included as "Rare. Seen during the migrations."

Beyond an evident effort at intelligent work, the reviewer discovers nothing to commend, but the effort falls so far short of success and exposes such lamentable ignorance of the subject and lack of original investigation, that the result can only be regarded as a compilation made under most unfortunate circumstances and unworthy of extended criticism.—F. M. C.

Rives's 'Catalogue of the Birds of the Virginias.'*—This catalogue of the birds of Virginia and West Virginia is so admirably proportioned, and so carefully worked out in its details, that it might well serve as a model for works of its kind. The paper begins with a review of the early accounts of Virginia birds, a dozen pages being filled with extremely interesting extracts from the writings of various travellers and colonists, from William Strachey in 1610 to Andrew Burnaby in 1775. Following this is a bibliographical list of the more important papers upon the region, that have appeared in recent years (1862-1889). Then comes an introductory chapter of fifteen pages discussing the topography, climate, flora and fauna, accompanied by a colored map showing, theoretically at least, the distribution of the usually recognized faunas occurring within the area. This is followed by the catalogue proper, in which 304 species and subspecies are treated, half a dozen lines or more being given to each. These accounts are based upon considerable "personal observation in dif-

*Proceedings | of | The Newport | Natural History Society, | [Seal] | 1889-90. | — | Document VII. | — | A Catalogue of the Birds of the Virginias, | by Wm. C. Rives M. A., M. D. | — | Newport, R. I.; | printed for the Society by T. T. Pitman, | October, 1890. 8vo., pp. 100, with map.

ferent localities, especially in Albemarle County, and upon the various papers already published, together with several other sources of information." The latter seem to include especially local reports to the Division of Economic Ornithology and Mammalogy of the Department of Agriculture, and manuscript notes from Captain Charles H. Crumb of Cobb's Island. The literature of the subject has been searched with extreme thoroughness, and selected with excellent judgment. We are told the things we want to know, and few, if any, records of importance have been overlooked. Indeed, if any criticism is possible, it is that occasionally some record has been quoted that might as well have been ignored. The paper closes with a 'hypothetical list' of forty species and a good index.—C. F. B.

Minor Ornithological Publications.—The following 'amateur' journals are similar in character to those noticed in Vol. VII, pp. 79-86.

The Hawkeye Ornithologist and Oölogist.

This monthly, published at Cresco, Iowa, by E. B. Webster, made its first appearance in January, 1888, and stopped with Vol. II, No. 9, September, 1889. It contains among other articles and notes the following (Nos. 1933-1943):—

1933. *Carolina Wren*. By J. W. Jacobs. '*The Hawkeye Ornithologist and Oölogist*,' Vol. I, No. 3, March, 1888, p. 37.—Nests and eggs.

1934. *Habits of Some American Grebes*. By Oliver Davie. *Ibid.*, pp. 38-39.

1935. *Reminiscences of the Early Life of a Tame Crow*. *Ibid.*, pp. 43-44.

1936. *The White-rumped Shrike in Western New York*. By Neil F. Posson. *Ibid.*, No. 7, July, 1888, pp. 95-96.—Nesting habits.

1937. *Nesting of the Sharp-tailed and Seaside Finches*. By C. S. Schick. *Ibid.*, No. 8, August, 1888, pp. 102-103.

1938. *Nidification of the Osprey*. By Walter Raine. *Ibid.*, No. 9, Sept., 1888, pp. 113-114.

1939. *Nesting of the White-breasted Nuthatch*. By J. Warren Jacobs. *Ibid.*, No. 10, October, 1888, pp. 119-120.

1940. *Birds of Greenbriar County, West Va.* By Thaddeus Surber. *Ibid.*, Vol. II, No. 1, Jan., 1889, pp. 2-4; No. 2, Feb., 1889, pp. 13-15; No. 3, March, 1889, pp. 29-32.—A list of 121 species.

1941. *The Red-breasted Nuthatch*. By Neil F. Posson. *Ibid.*, No. 4, April, 1889, pp. 37-38.

1942. *Nesting of the Kentucky Warbler in Southwestern Pennsylvania*. By J. Warren Jacobs. *Ibid.*, pp. 38-41.

1943. *Robins Ahead Again*. By S. A. Ball. *Ibid.*, No. 5, May, 1889, pp. 46-47.—Early nesting.

The Oölogists' Exchange.

'The Oölogists' Exchange,' a four-page monthly, was published first in January, 1888, at Austin, Ill., by T. Vernon Wilson (Vol. I, Nos. 1-7);

[Oölogists' Exchange.—Continued.]

next at Sharon, Wis., by Dickinson & Durkee (I, 8-12); lastly at New York by Arthur E. Pettit (II, 1-11). This closed its existence in February, 1890. We note the following (Nos. 1944-1953):—

1944. *Topographical Oölogy*. By Frank H. Nutter. 'The Oölogists, Exchange,' Vol. I, No. 4, April, 1888.—*Buteo pennsylvanicus*, *Accipiter cooperi*, *Botaurus lentiginosus*.

1945. *The White-rumped Shrike*. By Zach. Taylor. *Ibid.*, No. 5, May, 1888.—Nesting habits.

1946. *The Killdeer Plover*. By E. F. Gamble. *Ibid.*

1947. *Cranes and Cormorants*. *Ibid.*, No. 7, July, 1888.—Nesting of *Ardea herodias* and *Phalacrocorax dilophus*.

1948. *The Hooded Warbler*. By 'Scolopax.' *Ibid.*

1949. *From the Sunflower State*. By D. B. R. *Ibid.*, No. 11, Nov., 1888.—*Ardea herodias*.

1950. *Nest of the Black-billed Magpie*. By Ferd. M. Stephens. *Ibid.*, No. 12, Dec., 1888.

1951. *The American Hawk Owl (Surnia ulula caparoch) in Wisconsin*. By W. E. Carter. *Ibid.*, Vol. II, No. 2, May, 1889.—Nest and eggs said to have been found.

1952. *The Great White Heron*. By T. G. Pearson. *Ibid.*, No. 4, July, 1889.

1953. *Brown Pelican*. By W. E. Hillman. *Ibid.*, No. 8, Nov., 1889.

The Loon.

'The Loon,' issued monthly by Thad. Surber at White Sulphur Springs, W. Va., began in January, 1889, and ended with Vol. I, No. 10, October, 1889. It contained the following articles worthy of mention (Nos. 1954-1957):—

1954. *A Tame Plover*. By E. B. Webster. 'The Loon,' Vol. I, No. 2, Feb., 1889, pp. 9-11.—*Charadrius dominicus*.

1955. *Blackbirds and Migration*. By S. A. Ball. *Ibid.*, No. 7, July, 1889, pp. 49-51.

1956. *Eggs of Nyctale acadica*. By C. W. Swallow. *Ibid.*, No. 9, Sept., 1889, pp. 67-68.

1957. [*Robins attacking a Hen.*] By A. MacLeod. *Ibid.*, pp. 68-69.

The Ornithologists' and Oölogists' Semi-annual.

This semi-annual, one of the best of these journals now existing, was first published January, 1889, at Pittsfield, Mass., by W. H. Foote. In its first two volumes (1889-1890) we note the following (Nos. 1958-1990):—

1958. *The Cardinal Grosbeak*. By J. A. Singley. 'The Ornithologists' and Oölogists' Semi-annual,' Vol. I, No. 1, Jan., 1889, pp. 18-19.

1959. *The Bell's Vireo*. By Lynds Jones. *Ibid.*, pp. 41-42.—Breeding habits.

1960. *Brains of Birds*. [By Austin F. Park.] *Ibid.*, pp. 44-45.—From an article in the 'Troy Times.'

[Ornithologists' and Oölogists' Semi-annual.—Continued.]

1961. *A Trip to Thompson's Lake*. By Dr. W. S. Strode. *Ibid.*, No. 2, July, 1889, pp. 3-8.—Birds breeding about a small lake in Illinois.
1962. *The Yellow-winged Sparrow*. By Lynds Jones. *Ibid.*, pp. 8-9.—In Iowa.
1963. *The Large-billed, or Louisiana, Water Thrush*. By C. C. Maxfield. *Ibid.*, pp. 13-14.—In western New York.
1964. *The Wilson's Phalarope*. By Wm. G. Smith. *Ibid.*, pp. 14-15.—As observed in Colorado.
1965. *Nesting of the Purple Gallinule*. By Jas. H. Rachford. *Ibid.*, p. 16.
1966. *The Chewink; Towhee*. By Lynds Jones. *Ibid.*, pp. 25-26.—Nesting habits.
1967. *The Lark Finch*. By J. A. Singley. *Ibid.*, p. 28.—Nesting habits in Texas.
1968. *The Western Yellow-winged Sparrow*. By J. A. Singley. *Ibid.*, p. 36.
1969. *My Hunt for the Blackpoll Warbler*. By F. H. Carpenter. *Ibid.*, pp. 38-40.
1970. *Floating Feathers from the West*. By Chas. A. Keeler. *Ibid.*, Vol. II, No. 1, Jan., 1890, pp. 3-5.—Brief sketches of several California birds.
1971. *Winter Birds of Raleigh, N. C.* By C. S. Brimley. *Ibid.*, pp. 7-10.
1972. *Observations from the Deck of a Steamer*. By L. Otley Pindar. *Ibid.*, pp. 11-12.—On the Mississippi and Ohio Rivers.
1973. *Collecting off the Coast of Maine*. By Chas. S. Butters. *Ibid.*, pp. 13-15.
1974. *Nesting of the Williamson's Sapsucker*. By Wm. G. Smith. *Ibid.*, pp. 15-16.
1975. *The Golden Eagle*. By Geo. F. Breninger. *Ibid.*, pp. 17-21.
1976. *The Nidification of the Golden Eagle*. By W. Raine. *Ibid.*, pp. 21-25.
1977. *The American Long-eared Owl*. By Dr. W. S. Strode. *Ibid.*, pp. 26-28.—Nesting habits.
1978. *Notes on Breeding Habits of Brown-headed Nuthatch at Thomasville, Georgia*. By C. J. Pennock. *Ibid.*, pp. 29-31.
1979. *How the Cooper's Hawk hunts his Prey*. By H. H. Brimley. *Ibid.*, pp. 32-34.
1980. *Report of the Melological Committee*. By S. Willard Bridgham. *Ibid.*, pp. 41-47.—Some account of the singing of various common birds.
1981. *The American Sparrow Hawk*. By Dr. W. S. Strode. *Ibid.*, No. 2, July, 1890, pp. 3-6.—Chiefly nesting habits.
1982. "George." By H. H. Brimley. *Ibid.*, pp. 6-8.—A captive Barred Owl.
1983. *Some Hints on Finding Nests*. By C. S. Brimley. *Ibid.*, pp. 9-10.—Brief notes on several birds in North Carolina.

[Ornithologists' and Oölogists' Semi-annual.—Continued.]

1984. *The Rocky Mountain Screech Owl*. By Wm. G. Smith. *Ibid.*, p. 11.—Nesting habits.
1985. *The Catbird*. By Wm. L. Kells. *Ibid.*, pp. 12-15.—In Ontario.
1986. *The Burrowing Owl*. By F. T. Pember. *Ibid.*, pp. 16-18.—Nesting habits especially.
1987. *Among the Gulls at Duck Island*. By Chas. S. Butters. *Ibid.*, pp. 21-23.—On the coast of Maine.
1988. *Nesting of the Turkey Buzzard*. By Jno. A. Donald. *Ibid.*, pp. 25-26.
1989. *The Prairie Horned Lark*. By Lynds Jones. *Ibid.*, pp. 27-29.
1990. *The Thrushes*. By Charles D. Oldright, Lynds Jones, Willard N. Clute, et al. *Ibid.*, pp. 32-43.—Reports by members of the Wilson Ornithological Chapter of the Agassiz Association, chiefly upon nesting and migration of *Mimus polyglottos*, *Galeoscoptes carolinensis*, *Harporhynchus rufus*, *Turdus mustelinus*, *T. fuscescens*, *T. a. pallasii*, *T. u. swainsonii*, *Merula migratoria*.

The Hoosier Naturalist : The Naturalist.

'The Hoosier Naturalist' was published first at Valparaiso, Indiana, by A. C. Jones and R. B. Trouslot as a monthly in August, 1885; Mr. Jones retired after the issue of Vol. I, No. 5. With the end of Vol. II (July, 1887) publication was suspended, but was resumed with Vol. III, No. 1, in January, 1888, as a bi-monthly. At the close of 1888 the place of publication was changed to Kansas City, and the journal became a monthly with a change of title to 'The Naturalist.' After Vol. IV, No. 2, Feb., 1889, publication was suspended until October, 1889, since when publication has continued monthly. We note the following in Vols. I-IV (Nos. 1991-2014):—

1991. [Notes on *Sialia sialis* and *Tyrannus tyrannus*.] By W. C. Ransburg. 'The Hoosier Naturalist,' Vol. I, No. 1, Aug., 1885, p. 5.
1992. *An Insectivorous Kite*. By E. L. Brown. *Ibid.*, No. 3, Oct., 1885, p. 25.
1993. *Breeding Habits of Ardea herodias as seen during a Visit to Crane Town*. By [R.] B. [Trouslot.] *Ibid.*, No. 6, Jan., 1886, p. 81.
1994. *Birds of New Mexico*. By Charles H. Marsh. *Ibid.*, No. 7, Feb., 1886, p. 98; No. 8, March, 1886, p. 124.
1995. *Ruby-throated Humming Bird*. [By R. B. Trouslot.] *Ibid.*, No. 7, Feb., 1886, p. 100.—Habits in captivity.
1996. *Nesting of the Blue-winged Yellow Warbler*. By Thos. H. Jaedson [=Jackson]. *Ibid.*, p. 102.
1997. *Was it Instinct?* By 'Æsalon columbarius.' *Ibid.*, p. 108.—*Corvus americanus* hunting for food.
1998. *Bald Eagle*. By John B. Wheeler. *Ibid.*, p. 109.—Habits in Florida.
1999. *Great Horned Owl Eggs*. By James C. Jay. *Ibid.*, p. 112.

[Hoosier Naturalist: The Naturalist.—Continued.]

2000. *Notes on Winter Birds of East Hartford, Conn.* *Ibid.*, No. 8, March, 1886, p. 129.

2001. *A List of the Winter Birds of the Vicinity of Bloomington, Ind.* By W. S. Blatchley. *Ibid.*, Nos. 9 and 10, April and May, 1886, p. 151; No. 11, June, 1886, pp. 169-171.

2002. *New Mexican Humming Birds.* By Charles H. Marsh. *Ibid.*, p. 177; No. 12, July, 1886, pp. 192-193.

2003. *Changing Habits in the Nesting of Birds.* By L. T. Meyer. *Ibid.*, Vol. II, No. 2, Sept., 1886, p. 17.—*Chætura pelagica*, *Passer domesticus*, *Petrochelidon lunifrons*, *Sitta carolinensis*, *Sialia sialis*.

2004. *About My Pets—One of Them.* By 'The Hoosier Schoolmaster' [= —Rausburg]. *Ibid.*, No. 7, Feb., 1887, pp. 89-90.—*Icterus galbula*.

2005. *Prairie Chickens in Winter.* By C. B. J. *Ibid.*, p. 92.—Burrowing in the snow.

2006. *Birds of Monroe County, Indiana.* By Barton W. Evermann. *Ibid.*, No. 10, May, 1887, pp. 137-145.—A briefly annotated list of 178 species.

2007. *A Strange Place for a Nest.* By F. Vernor. *Ibid.*, No. 11, June, 1887, p. 160.

2008. *An Addition to the List of Birds of Monroe County, Indiana.* By B. W. Evermann. *Ibid.*, No. 12, July, 1887, p. 164.

2009. *A Voice from Florida.* By Chas. S. McPherson. *Ibid.*, pp. 165-166.

2010. *White-breasted Nuthatch.* [By R. B. Trouslet.] *Ibid.*, Vol. III, No. 2, March, 1888 [,p. 5].

2011. *Birds of Western Florida. The Laughing Gull.* By Chas. S. McPherson. *Ibid.*, Nos. 4 and 5, July and September, 1888 [,p. 20].

2012. *Vermont Notes.* By H. H. B. *Ibid.*, Vol. IV, No. 1, Jan., 1889 [,p. 1].

2013. *The Shore Lark.* By Frank H. Nutter. *Ibid.*, No. 2, Feb., 1889 [,p. 5].

2014. [Snowy Owls.] Editorial. *Ibid.*, No. 6, Jan., 1890 [,p. 29].—C. F. B.

Publications Received.—Anthony, A. W. A New Junco from California. (*Junco hyemalis thurberi*). (*Zoe*, I, p. 238.)

Beddard, Frank E. On the Anatomy of *Podica senegalensis*. (*P. Z. S.* 1890, pp. 425-443, pl. xxxix.)

Belding, Lyman. Land Birds of the Pacific District. (Occasional Papers of the Cal. Acad. Sci., II.)

Brusina, S. Motriocem Pticejga Svijeta. Aputak i popis domacih ptica. (*Soc. Hist. Nat. Croatica*.)

Cory, C. B. The Birds of the Bahama Islands. Revised Edition. 4to. Boston, 1890.

Dresser, H. E. (1) Notes on the Racquet-tailed Rollers. (*Ann. & Mag. Nat. Hist.*, Oct. 1890.) (2) Notes on some Birds collected by Dr. G. Radde in the Transcaspien Region. (*Ibis*, July, 1890.)

Hancock, Joseph L. Anomalies in the Limbs of Aves. (North Amer. Practitioner, Sept. 1890.)

Leverkühn, Paul. (1) Kampf von Schwarzdrossel mit Reptilien. (Zool. Garten, 1890.) (2) Ueber eine alte pommersche Vogelfauna. (Zeits. für Orn. XIV, pp. 134-142.) (3) Die Legend vom Stieglilitz. (Orn. Monats. Deut. Ver. z. Schutze der Vogelwelt, xv.)

Löbell, H. v. Bericht über das Militär-Briefftaubenwesen, 1881 bis 1889. (Jahresb. ü. d. Veränd. u. Fortsch. im Militärwesen, 1889.)

Lucas, F. A. The Expedition to the Funk Island, with observations upon the History and Anatomy of the Great Auk. (Rep. Nat. Mus., 1887-88, pp. 493-529, pll. lxxi-lxxiii.)

Meyer, A. B. Notes on Birds from the Papuan Region, with descriptions of some New Species. (Ibis, Oct. 1890.)

Nicholson, Francis. Sundevall's Tentamen. Translated into English. London, 8vo, 1889, pp. 316.

Palmer, William. Notes on the Birds observed during the Cruise of the United States Fish Commission Schooner Grampus in the Summer of 1887. (Proc. U. S. Nat. Mus. XIII, pp. 249-265.)

Pasteur, J. D. [Telegraph-poles attacked by Woodpeckers.] (Notes from the Leyden Museum, XII, pp. 209, 210.)

Ridgway, R. Observations on the Farallon Rail (*Porzana jamaicensis coturniculus* Baird). (Proc. U. S. Nat. Mus. XIII, pp. 309-311.)

Shufeldt, R. W. Contributions to the Comparative Osteology of Arctic and Subarctic Water-birds. Part VIII. (Journ. Anat. and Phys., xxv, pp. 60-77.)

Tschusi zu Schmidhoffen, V. Ritter v. Sechster Jahresbericht (1887) des Comité's für ornithologische Beobachtungsstationen in Oesterreich-Ungarn. (Ornis, 1889-90.)

Warren, B. H. Birds of Pennsylvania. Second Edition. 8vo, 1890, pp. xiv, 434, pll. 100.

American Field, XXXIV, Nos. 11-26, 1890.

American Journ. Sci., Oct.-Dec., 1890.

American Naturalist, Sept.-Nov., 1890.

Australian Museum, Report of the Trustees for the year 1889.

Collector's Monthly, I, Nos. 1, 2, Nov., Dec., 1890.

Forest and Stream, XXXV, Nos. 8-23.

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Natural History Observer, I, Oct.-Dec., 1890.

Naturalist, Month. Journ. Nat. Hist. for North of England, Nos. 183-185, 1890.

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Ornithologist and Oölogist, XV, Sept.-Nov., 1890.

Ottawa Naturalist, IV, Oct., Nov., 1890.

Wisconsin Naturalist, I, No. 4, Nov., 1890.

Zoe, I, Sept.-Nov., 1890.

Zoölogist, Oct.-Dec., 1890.

GENERAL NOTES.

Anas crecca in Connecticut.—November 14, 1889, a resident gunner brought me a fine adult male of this species, which he said he shot as it was flying with another, apparently of the same species, over an open field. It is now in the collection of Mr. John H. Sage of Portland, Conn. —WILLARD E. TREAT, *East Hartford, Conn.*

Barrow's Golden-eye (*Glaucionetta islandica*) near Washington, D. C.—A female Golden-eye, shot on the Potomac River opposite Washington, Nov. 22, 1889, by C. Herbert, was examined by Mr. Ridgway who pronounced it *G. islandica*. The specimen is now in the collection of J. D. Figgins. Besides being new to the avifauna of the District of Columbia, this record appears to extend the southern range of the species in the East about one hundred and fifty miles.—CHARLES W. RICHMOND, *Washington, D. C.*

Second Occurrence of the White-faced Glossy Ibis (*Plegadis guarauna*) in Kansas.—A young female was captured October 17, 1890, on the Arkansas River, near Wichita, and kindly sent me for identification by Dr. R. Matthews, of that city. The first specimen was shot in the fall of 1879, at a lake near Lawrence,—as reported in my 'Catalogue of the Birds of Kansas,'—and is now in the fine collection in 'Snow Hall,' at the State University.—N. S. GOSS, *Topeka, Kansas.*

Phalaropes at Swampscott, Massachusetts.—The morning of Aug. 12, 1890, dawned at Swampscott, Mass., with the wind northeast and a cloudy sky. At noon the wind fell to a whole-sail breeze, tempting my brother, Dr. J. A. Jeffries, and myself to try a sail.

After standing to the east for about a mile we noticed a flock of at least three hundred birds, apparently Sandpipers, flying rapidly back and forth about half a mile in-shore of us, and an equal distance off the land. Suddenly, to our surprise, they settled on the water, and we knew they were Phalaropes, birds that appear as a rule, only in small numbers with us and not regularly. In twenty years' sailing we have not seen any in the water in our locality.

From Aug. 12 until Sept. 26 Phalaropes were seen nearly every day we went out, usually in small scattered bunches of from six to twenty birds swimming about on the water, sometimes just out of the breakers and again twelve miles off shore.

All the birds we succeeded in sailing onto were very tame, simply swimming away from our cat-boat to prevent being run down. Yet it was not always easy to take specimens, as a flock seldom remained long in one spot; rising every few minutes they would fly about, alight, and then off again before we could sail one half the distance. Sept. 9 we sailed into the

midst of a flock of several hundred birds, which chanced to settle right in front of us. They were very tame.

All birds taken previous to Sept. 26 were Northern Phalaropes, and while it is not possible to state that all the Phalaropes seen were of the same species, we can say that no individual was noticed with any specially distinct coloring to attract our attention. A single specimen of Red Phalarope was taken Sept. 26 about one mile off shore. It was swimming about alone, and on dissection proved to have been feeding on land insects, probably blown off by the stiff northwester then in full force.

What I desire to call attention to in this case is that a bird of not regular occurrence suddenly appears in large numbers, and once with us remains for six weeks.

As evidence that nearly all birds seen were included in the original flock, I would say that,—1st, the Phalaropes appeared in a flock, after a stiff although short northeast wind. 2nd, On days when many small bunches were seen, we did not see the large flock. 3rd, Birds started did not seem to us to make any attempt to resume a flight, but simply flew off and settled down again.

Twelve or fifteen were taken, all being very fat.—W. A. JEFFRIES, *Boston, Mass.*

Golden Eagle at Shelter Island, New York.—A fine specimen of this noble bird was shot at Shelter Island Heights on the 19th of last October, and brought me to be mounted. It was a female, in young of the year plumage, and exhibited the following measurements (in inches), taken before skinning: length 36.25, extent 82.25, wing 24.87, tail 13.75, culmen 1.75, gape 2.70, tarsus 4.25. The craw and stomach contained the remains of a rabbit. The young man who shot it stated that it was in the act of swooping down upon him, being within a few yards, when he fired, and it fell dead at his feet. This is the first instance of the occurrence of this species here that has come to my notice, and it is a rare record for Long Island.—W. W. WORTHINGTON, *Shelter Island Heights, N. Y.*

Falco dominicensis Gmel. versus Falco sparveriioides Vig.—Although the very different looking birds to which the above names, in a restricted sense, respectively belong, usually have been recognized as distinct species, their specific identity was claimed on good evidence as long ago as 1855 by Dr. J. Gundlach, who then stated,* as he has subsequently on various occasions, that he found the two paired together, and undoubtedly holding the relation to one another of light and dark individual phases. Such relationship, however, seemed so improbable, that most authors (the present writer among the number) have overlooked or declined to accept Dr. Gundlach's testimony, or (as in my own case) have

*Erinn. VIII, Jahresb. Deutsch. Orn.-Gess. p. lxxxiv (Journ. für Orn. 1854, extraheft).

deferred its acceptance until the proof could be seen. Any doubts which I may have entertained in the matter have been thoroughly dispelled by a series of specimens which Dr. Gundlach has sent to the National Museum. *F. dominicensis* being the older name, *F. sparveroides* therefore becomes a synonym.—ROBERT RIDGWAY, *Washington, D. C.*

Strix pratincola again near Troy, N. Y.—On December 3, 1890, Mr. Andrew Peters, of West Troy, N. Y., found a live American Barn Owl in an old barn about a mile and a half west of the Hudson River at Troy. He shot at the bird, and it flew out of the barn and away out of sight. Crows soon found the Owl and began to mob it, so that Mr. Peters again saw and shot the bird, and thus captured it. I found that this Owl weighed 19 oz. av., including a two-ounce ball of hair and bones of mice in its stomach; and that the bird was in full flesh, not fat at all, and was a not very old female.—AUSTIN F. PARK, *Troy, N. Y.*

American Barn Owl (*Strix pratincola*) on Long Island, N. Y.—On the morning of Sept. 10, 1890, while at breakfast, I noticed the noisy outcries of a number of Crows. Going out to investigate, I found them congregated in a large oak tree, a number of which surround my home. Their actions indicated the presence of an enemy, for they would swoop down upon some object, rest a moment, and then fly back. I advanced to a position from which the cause of the rough cries and excited actions of the Crows was visible, immediately recognized the unusual visitor, and in a minute or two, claimed him as my own. The specimen is a light-colored male.—FRANK E. JOHNSON, *Parkville, Long Island, N. Y.*

Coccyzus americanus Breeding at Ottawa.—Last spring (1890) a pair of Yellow-billed Cuckoos built their nest in a crab tree in our garden. The male and young escaped, but the female is now in my collection.—GEO. R. WHITE, *Ottawa, Ontario.*

A new name necessary for *Selasphorus floresii* Gould.—If the so-called genus *Selasphorus* is to be considered of merely subgeneric rank, as seems to be generally admitted, a new name becomes necessary for this species, a *Trochilus floresii*, from Jamaica, having been described in 1846 by Bourcier, in the 'Revue Zoologique' for that year (1846). It would give me pleasure to name the species thus deprived of a cognomen after Mr. Gould, or some other person to whom we are specially indebted for our knowledge of the *Trochilidae*; but unfortunately the names of such as could be properly used in connection with the present species are already attached to other species, and thus, so uncertain is the status of current genera in this family, might conflict with their use in a new connection. A descriptive name being therefore, under the circumstances, probably the best, I would rechristen it *Trochilus rubromitratus* (or *Selasphorus rubromitratus*), in allusion to its red hood.—ROBERT RIDGWAY, *Washington, D. C.*

Note on the Alleged Occurrence of *Trochilus heloisa* (Less. & De Latt.) within North American Limits.—A recent careful examination of the specimen (No 6072, U. S. Nat. Mus., El Paso, Texas, J. H. Clark*) on which the supposed occurrence of this species within our territory is based, shows that an error has been made in its identification, it being not this species at all, but a young example of *T. calliope* Gould. Should *T. heloisa* be found within our limits, as will doubtless some time be the case, it may be expected to occur somewhere along the lower Rio Grande, since it belongs to the moister region of eastern Mexico, the fauna of which is quite distinct from that of the arid central region in which El Paso is situated.—ROBERT RIDGWAY, *Washington, D. C.*

***Scenopæetes denti-rostris*.**—A new generic name seems to be required for the Tooth-billed Bowerbird of Australia, as *Scenopæus* of Ramsay, 1875, is preoccupied in entomology by *Scenopæus*, Agassiz, 1847 (= *Scenopinus*, Latreille, 1802).—ELLIOTT COUES, *Washington, D. C.*

***Ammodramus caudacutus nelsoni* and *A. c. subvirgatus* in Connecticut.**—I have in my collection eighteen specimens of *Ammodramus* taken here between Oct. 4 and 13, 1890. Ten are true *nelsoni*, four *subvirgatus*, and the others intermediates.

They were found in the meadows near the Connecticut River, and seemed partial to certain localities. The height of the migration was apparently on the 10th of the month when thirteen were secured, two more being seen that were not captured. On other days only from one to three birds could be found.

On the day when the larger number were killed, the birds appeared somewhat stupid, flying from the thick grass when disturbed and perching on the wild oats where they remained quiet. At other times they were wild and difficult to obtain.—JNO. H. SAGE, *Portland, Conn.*

Note on *Junco hyemalis thurberi* Anthony.—A collection of birds purchased in October, 1889, by the American Museum of Natural History from Mr. E. C. Thurber, contains eleven specimens of the bird recently described by Mr. Anthony under the above name (cf. *Zoe*, I, 8, p. 238, Oct., 1890). An examination of these specimens during the past summer in connection with British Columbia material permits me to agree with Mr. Anthony as to their distinctness from the dark coast form, *Junco hyemalis oregonus*. Mr. Anthony, however, has made no comparison with a much closer ally, *Junco hyemalis shufeldti*, which differs from *oregonus* in exactly the same manner as the birds he has described as *thurberi*. While these two forms may be subspecifically separable, there

* Cf. ELLIOT, Illustr. B. N. Am. I, pl. xxi, —COOPER, Orn. Cala. I, 1870, p. 361.—B. B. & R. Hist. N. Am. B. II, 1874, p. 465, pl. xvii, fig. 6.—A. O. U. Check-List, No. 435.

are not at present in collections enough properly prepared and unworn breeding specimens of *shufeldti* to render a comparison of their characters conclusive.—FRANK M. CHAPMAN, *American Museum of Natural History, New York City.*

Black-throated Bunting (*Spiza americana*) on Long Island, N. Y. — A young male of this species was shot at Blithewood, Long Island, on Aug. 25. The bird was in bad company when it met its fate, for it had joined a flock of English Sparrows in their depredations upon a neighboring oat-field. The specimen is a young male, the black throat indicated only by bounding streaks of that color, and a black tip here and there among the throat feathers.—FRANK E. JOHNSON, *Parkville, Long Island, N. Y.*

Breeding of Dendroica maculosa in Western Pennsylvania.—While on a collecting trip in Butler and Armstrong Counties, Pennsylvania, in May, 1889, I had the good fortune to find the Magnolia Warbler nesting. The discovery was made in the narrow valley—they are rarely a hundred feet wide—of one of the brooks emptying into Buffalo Creek, about six miles north of the town of Freeport. On May 30, while rummaging about in a bushy growth of young hemlock saplings, I found a nest placed about three feet from the ground in the midst of one of them. It was made of slender, blackish, dead twigs with fine weed-stems and horsehair for lining. On June 1 the nest contained three eggs, and on the 3d I saw the female on the nest in which now a fourth egg had been laid. She left her place, and though I waited for her to return to it, in order that I might complete the identification by shooting her as she flew from the nest, she refused to do so, and in company with her mate hovered uneasily about until nightfall. On my return early the next morning the female left the nest at my approach, and a moment later lay dead at my feet. Examining her at my leisure, I saw there was no mistake in my identification, and when later I took the precaution to compare the bird with the description in Coues's Key, it agreed in every particular.—W. E. CLYDE TODD, *Beaver, Beaver County, Penn.*

Correction.—In my 'Revised Catalogue of the Birds of Kansas' I described what I then supposed to be the nest and eggs of the Sycamore Warbler (*Dendroica dominica albilora*). I am now satisfied that the evidence is not reliable upon which the entry was based.

I have met with the birds upon several occasions in the State, during the summer months, on the banks of the Neosho River, and always in or about the large sycamore trees; but I have never been so fortunate as to find their nest, neither can I find any authentic description of their nest and eggs. They undoubtedly nest in the tree tops, like the Eastern bird, *D. dominica*. Information in regard to their nesting habits, etc., is very desirable.—N. S. GOSS, *Topeka, Kansas.*

The Mockingbird at Springfield, Massachusetts.—For the last three seasons a pair of Mockingbirds have located themselves at the same place in West Springfield. This year the male arrived from the South on the twenty-second day of April, but the female was not seen until about the first of June; they both departed early in August.—ROBERT O. MORRIS, *Springfield, Mass.*

Note on *Copsychus adamsi*—Correction.—In my list of birds from Northeastern Borneo I described as new *Copsychus adamsi*. This is apparently the same as *C. niger* Wardlaw Ramsay, Proc. Zool. Soc. 1886, p. 123, from Elopura, Northeastern Borneo, the description of which I somehow overlooked when searching that volume for new forms of *Copsychus*. Mr. Ramsay's specimen seems somewhat larger than mine, and his description is not quite as full as it might have been, but in all probability the birds are the same.

The above correction was made before the copy of 'Nature' of October 30, containing some remarks on my paper by an anonymous correspondent, was received.—D. G. ELLIOT, *Am. Mus. Nat. Hist., New York City.*

Further Cape Cod Notes.—During August and September, 1890, I made the following interesting captures near Highland Light, North Truro, Mass.

***Erismatura rubida*.**—On August 11 I found four young accompanied by the female parent on a large shallow pond which lies between the towns of Truro and Provincetown. At the approach of my boat the old bird left her young and joined five other adults which were resting upon the water half a mile away; the young ones, however, were too young to fly, and so attempted to escape by swimming and diving to the shelter of a cat-tail island near which they happened to be when surprised. Two of them reached this place of safety, but the others were secured after a troublesome chase. They were very expert divers, remaining beneath the surface for a considerable length of time, and on appearing again exposing the upper part of the head only, and that for but a few seconds. As the water just here happened to be filled with pond weed (*Potamogeton pectinatus* and *P. perfoliatus*) it was not difficult to trace the motions of the birds, when beneath the surface, by the commotion which they made in passing through the thick masses of vegetation. The flock of old birds contained at least two adult males, which were very conspicuous among their dull-colored companions. They were all very shy, so that it was impossible to approach to within less than one hundred yards of them. The adults, as well as the two remaining young, were seen afterwards on several visits to the pond.

The two taken are males. The head and greater part of the body is covered with down, but the remiges, rectrices, and scapulars are beginning to appear, as are also the true feathers along the sides of the body. No.

5056 measures: length 305, extent 254, wing 53; no. 5057: length 324, extent, 279, wing 50 mm.

In the 'American Naturalist' Vol. VII, July, 1874, Mr. Ruthven Deane writes: "On the 10th Sept., 1873, I was greatly surprised at finding two immature specimens of *Erismatura rubida* hanging up with a bunch of Winter and Summer Yellowlegs in a game stall in Quincy Market, Boston. They had been sent from Cape Cod, Mass., the day previous, where they were said to have been shot. They were apparently not more than six weeks old, and as their wings were not fledged enough to fly a rod, they undoubtedly must have been hatched in that locality. . . . I obtained one of the above specimens which is now in my cabinet and I have no doubt that these birds were taken on Cape Cod. I have seen specimens taken as far east as Niagara Falls in May; these were in high breeding plumage, though I did not learn that any nests had ever been found in that locality." This appears to be the only record of the breeding of the Ruddy Duck in Massachusetts, hence the following instances of the presence of adult birds during the breeding season in southern New England may be of interest, as they tend to show that the species may breed here more commonly than is at present supposed. In Mr. William Brewster's collection there is an adult female in worn breeding plumage taken at Rye Beach, N. H., August 22, 1879. This bird may have been a migrant, but taken in connection with the date at which I found young birds still accompanied by their parent on Cape Cod it does not seem likely that it had come from any great distance. Mr. J. M. Southwick of Providence writes me under date of October 25, 1890: "Two Ruddy Ducks at hand this past season. They were males in full plumage, received July 7 and 14 respectively. Each had been killed a few days (say one or two) previous at Seaconnet, R. I. I have another of same quality taken at same place early in July, 1889. In 1887 Dr. H. F. Marshall killed a pair, ♂ in full plumage, ♀ not so perfect. They were together, and he found no more of them. My friend Mr. Newton Dexter, who killed the last arrivals, is out of town, so I cannot substantiate my opinion, but I am quite sure that in 1889 he shot both ♂ and ♀ at about the same season." So many birds being taken in this one locality during the breeding season and in successive years, would seem to indicate that there is something more than mere accident in the occurrence, and as I understand that there is favorable breeding ground for them at Seaconnet, I have little doubt that when proper search is made, nests or young will be found there. Mr. M. Abbott Frazar informs me that he has had recently pass through his hands two adults taken during the breeding season, on the Charles River and at Wakefield, Mass., respectively.

Gallinula galeata.—Among the cat-tails bordering the pond in which the Ruddy Ducks were found this species occurred in large numbers. The pond was formerly a tide-meadow and harbor opening into Massachusetts Bay, or perhaps more properly into Provincetown Harbor, but as there was danger of the Cape wearing through at this point, the Government

about twenty years ago shut off the outlet, thus converting the harbor into a shallow pond which immediately became fresh, and as soon as the cat-tails began to grow at its margins formed a very favorable breeding ground for reed-loving birds. The proportion of cat-tails to water has been steadily increasing, so that of the total nine hundred or more acres of the original pond there must be at present at least two hundred and fifty acres of cat-tails. The open water is seldom more than four feet deep (the average depth is much less), and in the shallower parts is filled with *Potamogeton*.

The Gallinules were found in such numbers that without making any special effort in search of them from five to eight might be seen in the course of a row around the pond close to the edge of the cat-tails. This, for such a shy, retiring bird, is a large number to see in one day in Massachusetts. At almost any point where the fringe of cat-tails was more than a few yards deep, the report of a gun would immediately start the noisy and characteristic outcry of a number of individuals, scarcely any of which, however, would show themselves unless it were by accident at the edge of the cat-tails, or flying across some pool or old tide creek. Although, on account of the lateness of the season at which I visited the pond, no nests were found and the young birds taken were so fully fledged that they might have been migrants, there is but little doubt that the species breeds there. In fact a gunner who has lived for many years on the shore of the pond and who knows the birds well, tells me that the 'dippers' (*Erismatura*) and 'pond hens,' as the present species (together with *Fulica americana* which is abundant during migration) is called, first began to frequent the pond as migrants a year or two after it became fresh, and that a few years after their first appearance a few pairs remained to breed, which they have continued to do in varying but steadily increasing numbers ever since.

Lanius ludovicianus excubitorides.—A young male of this species was killed at High Land on August 22. The bird shows remnants of the first plumage on the occiput, throat, median line of belly, crissum and upper tail-coverts. This is the only one that I have seen on Cape Cod.

Icteria virens.—An adult male was found dead near one of the poles upon which the storm signals are hoisted at the U. S. Signal Station at Highland Light on the morning of September 10. As birds frequently kill themselves by flying against these poles during the night, it is probable that this one was so killed during the night of the 9th or early morning of the 10th. There was a large migration of shore birds past Highland Light on the night of September 9, *Phalaropus lobatus*, *Totanus melanoleucus*, *T. flavipes*, and *Charadrius dominicus* being common, while of *Actitis macularia*, *Calidris arenaria*, and *Oceanodroma leucorhoa* one individual each was seen. Up to midnight, when I left the light, but one land bird, a *Dendroica*, probably *D. striata*, was seen.

Mimus polyglottos.—On September 11 I saw a single bird of this species near Highland Light. The bird was very shy and I was not absolutely sure of my identification until the next day when I saw two more,

one of which I secured. Several others were seen at about the same time and place by Mr. W. M. Small of Highland Light. The specimen taken is in first plumage, though fully grown and evidently old enough to have come from some distance.—G. S. MILLER, JR., *Cambridge Mass.*

Uncommon Birds for Nantucket Island, Massachusetts.—*Ardea egretta*, AMERICAN EGRET.—On September 20, 1890, while shooting at the eastern end of this island, I saw in the distance a large white heron-like bird, which I thought might be *Ardea occidentalis*, but unfortunately I failed to secure it. The following day it was again seen, near the same locality. On September 23, 1890, this bird was shot, and I saw it; it proved to be *Ardea egretta*, and was without any plumes. This is the first record of one being taken on this island.

Mimus polyglottos. MOCKING BIRD.—On November 20, 1890, while driving on the western part of the island, and passing near a large swamp, close to which was an unoccupied farmhouse, I saw a Mocking-bird running along the ridge pole of one of the small buildings. On getting out of my wagon to secure it, the bird flew into the middle of the swamp and perched on the top of a bush in full sight. Although a very difficult matter, owing to the water, I determined to go in after it. I had just started, when the bird flew towards me and alighted on a fence post, from which I shot it. This is the *third* instance of my shooting this bird here, besides seeing another flitting among the houses in the town on August 11, 1889. These birds were all full-grown, and probably migrants, as I have never heard of their breeding on the island. They have never before to my knowledge been noted here.

Crymophilus fulicarius. RED PHALAROPE.—On October 25, 1890, a Red Phalarope (in the gray plumage) was shot near the 'No Bottom Pond,' on the outskirts of the town. Only one was seen. This is the first time to my knowledge that *C. fulicarius* has been taken here. I have in the past taken *P. lobatus* (September 20, 1870) and *P. tricolor* (August 31, 1889) on the island.—GEORGE H. MACKAY, *Nantucket, Mass.*

NOTES AND NEWS.

Dr. FERDINAND KRAUSS, of Stuttgart, Germany, an Honorary Member of the American Ornithologists' Union, died Sept. 15, 1890, at the age of 78 years. He was director of the Natural History Museum of Stuttgart, and had special charge of the departments of Botany and Zoölogy. His scientific papers cover a wide field, mammals and mollusks especially, as well as birds, coming within the scope of his work.

MR. HENRY DAVIS MINOT, an Associate Member of the American Ornithologists' Union, was killed in a railroad accident near New Florence, Penn., Nov. 13, 1890, aged 31 years. Mr. Minot, born in West Roxbury, Mass., Aug. 18, 1859, was a son of William and Katherine Maria (Sedgwick) Minot, and a brother of Professor Charles Sedgwick Minot of Boston. He entered Harvard College in 1875, but owing to ill health did not graduate, leaving the college during his sophomore year. He early evinced a passionate fondness for bird life, and when but sixteen years old wrote a very creditable manual entitled 'The Land and Game Birds of New England' (Boston, 1877, 8vo., pp. 472), showing keenness of observation and originality of treatment. He also published later 'A Diary of a Bird' (April, 1880), with the humane purpose of promoting sentiment favorable to the better protection of our song-birds. He also published various minor papers, including a list of birds observed by him in Colorado (Bull. Nutt. Orn. Club, V, pp. 223-232). Of late years his attention has been devoted almost exclusively to railroad matters, in which he soon became a leading financial expert, and for the last few years has been one of the best known business men, in connection with railroad enterprises, in the Northwest, his residence being at St. Paul, Minn. Although thus deeply engrossed in business he retained a strong interest in ornithology, and was looking forward, we are informed, to a period of leisure when he could resume his favorite studies. With a high order of intellectual ability, genial, warm-hearted and sympathetic, he will be deeply mourned by all who were blest with his personal acquaintance.

THE EXHIBITION of photographs and stereopticon slides at the Eighth Congress of the A. O. U. was so far a success as to show the great interest of such exhibitions and the high importance of this class of illustrations as an aid in ornithological work. At the next Congress of the Union, to be held at the American Museum of Natural History in New York, arrangements will be made for placing the pictures on exhibition throughout the meeting, while perhaps a special evening session may be devoted to stereopticon illustrations. It is therefore hoped that during the intervening months the members of the Union will make special effort to secure photographs *from life* of as many subjects as possible, especially for the stereopticon series. The Committee of Arrangements, to whom the matter was entrusted, was much gratified by the cordial response made to the call for pictures for the Eighth Congress.

BY A VOTE of the Union the address of the Retiring President, entitled, 'The American Ornithologists' Union,—a Seven Years' Retrospect,' was ordered to be printed separately, and a copy sent to each member of the Union. The address will be ready for distribution, as a separate publication, early in the present month.

THE ACTION on the Amendments to the By-Laws of the A. O. U., proposed at the Seventh Congress and referred to the Eighth Congress, resulted as

follows: All of the proposed amendments to Article I were rejected. Article II, Section 3, was amended to read as follows:

Article II, Section 3. The Secretary shall keep a record of the meetings of the Union and Council; shall give at least three weeks' notice to Active and Associate Members of the time and place of meetings; shall report to the Council all nominations for membership received by him; and shall send to each Active Member, at least three weeks before each stated meeting, a list of the nominees for Active Membership, with a statement of the residence of each nominee and the names of the Active Members signing his nomination; and also notify them of all proposed changes in the By-Laws; shall notify Members-elect of their election and Committees of their appointment; shall acknowledge all donations to the Union, and report the same at the next Stated Meeting; and he shall have charge of the Corporate Seal of the Union.

The amendment to Article III, Section 3, making five members of the Council a quorum for the transaction of business, was adopted.

The amendment to Article IV, Section 2, was rejected.

Article IV, Section 3, was amended in the second paragraph to read as follows:

In the ballots for Vice-Presidents and for members of the Council each voter may write on one ballot as many names as there are officers to be elected, viz: two on the first ballot for Vice-Presidents and seven on the first ballot for members of the Council; and on each subsequent ballot as many names as there are persons yet to be elected; and those persons who receive the votes of a majority of the members voting shall be declared elected, provided that the number of persons receiving such majority does not exceed the number of persons to be elected, in which case the vacancies shall be filled by the candidates receiving the highest majorities.

The amendments to Article IV, Section 4, were amended and referred to the next Congress for final action.

The amendment to Article IV, Section 8, was rejected.

The amendments to Article VIII were amended and referred to the next Congress for final action.

Rule VIII of the By-Laws and Rules was amended to read as follows:

Rule VIII. The printing for the Union shall be under the direction of the President, the Secretary, the Editor of 'The Auk', and four other members of the Council, and these seven shall constitute a Committee of Publication.

DR. C. HART MERRIAM, Chief of the Division of Ornithology and Mammalogy of the U. S. Department of Agriculture, will this year make a detailed biological survey of one of the least known, most interesting and inaccessible regions of the United States. On Jan. 1, 1891, a party under the leadership of Mr. T. S. Palmer, began an exploration of that particular portion of the desert region of southeastern California known as Death Valley, which can be entered only in the winter season, and

then only with great risk to the explorer, owing to the total absence of potable water for long distances. The party is expected to occupy the field for at least eight months, extending the survey over a considerable area of contiguous country, including the Mount Whitney region at the westward. The party is especially equipped for the trying work before it, every precaution being taken to guard against undue risk, and to secure the best results. In personnel and outfit, no party was ever better prepared for systematic field work in biology. The scientific staff will include, in addition to Mr. Palmer, Dr. A. K. Fisher, Mr. Vernon Bailey, Mr. E. W. Nelson, and Mr. F. Stephens, as zoölogists—all trained experts in this line of research. Prof. F. W. Coville, of the Botanical Division of the Department of Agriculture, has been detailed to accompany the expedition as botanist. A topographer accompanies the party for the purpose of running contour lines and determining with precision the altitudes of the life zones. Dr. Merriam, with other assistants, will join the expedition later, when the party will number not less than ten, exclusive of cooks and packers. It is expected that an area of not less than 30,000 square miles will be mapped, on a scale of four miles to the inch, with contour lines for every 100 feet. A portion of the region is depressed from 200 to 300 feet below sea level. Under all these conditions the results cannot fail to be of the utmost interest.

DR. EDGAR A. MEARNs, U. S. A., proposes to make a critical study of the Sparrow Hawks (the *Falco sparverius* group) and the Snipes (*Gallinago delicata*) of North America, and for this purpose solicits the loan of material for use in these investigations. Due credit will be given for aid thus rendered, and the specimens returned to the owners at the earliest practicable moment. The packages should be addressed, Dr. Edgar A. Mearns, Capt. Medical Department, U. S. A., Fort Snelling, Minn.

MR. J. A. ALLEN desires to make a careful investigation of the relationships of the various North American forms of the genus *Colaptes*, and solicits the loan of material for examination. Large series of specimens representing, respectively, *C. chrysoides*, *C. cafer*, *C. cafer saturator*, *C. mexicanoides*, and *C. ruficapileus* are especially desired. Also, *C. auratus* from any point west of the Mississippi River, or any specimens from the East showing any departures from the typical phase of the species.

Specimens may be forwarded at any time prior to November 1, 1891; but as many as possible should be in hand by October 1, in order that a report on the material, with an exhibition of specimens, may be presented at the next A. O. U. Congress, immediately after which the material will be returned to the owners. The packages should be addressed to Mr. Allen, American Museum of Natural History, 77th St. and 8th Ave., New York City.

AT THE late meeting of the American Association for the Advancement of Science, a formal organization was effected, by the ornithologists in attendance, of a 'Sectional Club' to be accessory to the A. A. A. S.

According to previous arrangements several papers had been prepared upon special topics. Among them may be mentioned one by Mr. Lynds Jones, of Iowa, on the Meadow Lark; by Mr. Widmann on the Orchard Oriole; by Messrs Butler and Everman upon the Baltimore Oriole. Prof. Steere, of Michigan, gave an extended account of the birds of the Philippine Islands, based upon observation made there during a series of years. A number of specimens were exhibited illustrating certain theories of coloration and distribution. Mr. Butler presented notes upon the distribution of the Evening Grosbeak. Prof. Osborn, of Iowa, spoke upon parasites of birds. From his observation he inferred that few of these actually feed upon the blood of their host, most of them subsisting upon feathers, hairs, etc.

The following officers were elected for the coming year: President, A. W. Butler, Brookville, Ind.; Secretary, Charles W. Hargitt, Oxford, Ohio; Treasurer, Otto Widmann, Old Orchard, Mo.; Executive Committee: Messrs. Evermann and Osborn, together with the foregoing officers.

Another meeting will be held at the time of that of the American Association next year, at Washington, D. C.

D. H. TALBOT, of Sioux City, Iowa, well known as a collector and naturalist, has recently presented to the Iowa State University his entire scientific collections and library. The natural history collections will be at once transferred to the University, but the library he will reserve till his death. The collections represent a wide range of subjects, including minerals as well as every department of zoölogy. The collection of birds is especially interesting and valuable.

MR. W. E. D. SCOTT, sailed for Jamaica, W. I., early in November last, for the purpose of spending six months collecting and studying the birds of the island. Late advices announce his safe arrival, and that he finds the outlook favorable for successful work.

ATTENTION is called to the change of address of the Treasurer, Mr. William Dutcher, which will be, after January 1, 1891, **No 525 Manhattan Avenue, New York City.** Members remitting by post office orders will please make them payable at **Station J, New York City.**